JEA
Kennedy Generating Station

Title V Air Operation Permit

Renewal Application

May 2007

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May 29, 2007

Trina L. Vielhauer, Chief
Bureau of Air Regulation
Division of Air Resource Management
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Subject: JEA Kennedy Generating Station Title V Permit Renewal Application

Dear Ms. Vielhauer:

On behalf of JEA, enclosed please find an original and four (4) copies of a Title V permit renewal application for the Kennedy Generating Station. In addition to the typical data requirements of Title V permit renewals, please note the inclusion of Appendix G, *Requested Changes to Current Title V Air Operating Permit* for your review and approval.

If you have any questions, please contact Bert Gianazza, P.E. of JEA at (904) 665-6247.

Sincerely,

Timothy Hillman
Senior Air Quality Specialist
BLACK & VEATCH

Enclosure[s]

cc: Bert Gianazza, P.E., JEA

Department of Environmental Protection

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MAY 30 2007
BUREAU OF AIR REGULATION

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for any air construction permit at a facility operating under a federally enforceable state air operation permit (FESOP) or Title V air permit. Also use this form to apply for an air construction permit:

- For a proposed project subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- Where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- Where the applicant proposes to establish, revise, or renew a plantwide applicability limit (PAL).

Air Operation Permit – Use this form to apply for:

- An initial federally enforceable state air operation permit (FESOP); or
- An initial/revised/renewal Title V air operation permit.

Air Construction Permit & Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: JEA
2. Site Name: Kennedy Generating Station
3. Facility Identification Number: 0310047
4. Facility Location...
   Street Address or Other Locator: 4215 Talleyrand Avenue
   City: Jacksonville County: Duval Zip Code: 32206
5. Relocatable Facility? ☐ Yes ☒ No
6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: N. Bert Gianazza, P.E.
2. Application Contact Mailing Address...
   Organization/Firm: JEA
   Street Address: 21 West Church Street
   City: Jacksonville State: FL Zip Code: 32202-3139
3. Application Contact Telephone Numbers...
   Telephone: (904) 665-6247 ext. Fax: (904) 665-7376
4. Application Contact Email Address: giannb@jea.com

Application Processing Information (DEP Use)

1. Date of Receipt of Application: 5/30/2007
2. Project Number(s): 0310047-016-AV
3. PSD Number (if applicable):
4. Siting Number (if applicable):

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

☐ Air construction permit.

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL).

☐ Air construction permit to establish, revise, or renew a plantwide applicability limit (PAL), and separate air construction permit to authorize construction or modification of one or more emissions units covered by the PAL.

Air Operation Permit

☐ Initial Title V air operation permit.

☐ Title V air operation permit revision.

☒ Title V air operation permit renewal.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.

☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☐ Air construction permit and Title V permit revision, incorporating the proposed project.

☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☐ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

This application is for renewal of the JEA Kennedy Generating Station (KGS) Title V permit.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
003	Combustion Turbine No. 3 (CT3)		NA
004	Combustion Turbine No. 4 (CT4)		NA
005	Combustion Turbine No. 5 (CT5)		NA
015	Combustion Turbine No. 7 (CT7)		NA

Application Processing Fee

Check one: ☐ Attached - Amount: _____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: ext. Fax:

4. Owner/Authorized Representative Email Address:

5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.

   _____ _____
   Signature Date

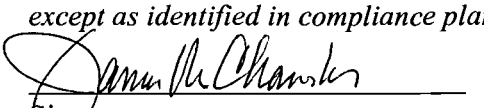
APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:
   Mr. James M. Chansler, P.E., D.P.A., Chief Operating Officer
2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):
   - ☐ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
   - ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
   - ☒ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
   - ☐ The designated representative at an Acid Rain source.
3. Application Responsible Official Mailing Address...
   Organization/Firm: JEA
   Street Address: 21 W. Church St.
   City: Jacksonville State: FL Zip Code: 32202
4. Application Responsible Official Telephone Numbers...
   Telephone: (904) 665-4433 ext. Fax: (904) 665-7990
5. Application Responsible Official Email Address: ChanJM@jea.com
6. Application Responsible Official Certification:

   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

   Signature

   5/22/07

   Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: N. Bert Gianazza
   Registration Number: 38640
2. Professional Engineer Mailing Address...
   Organization/Firm: JEA
   Street Address: 21 West Church Street
   City: Jacksonville State: FL Zip Code: 32202
3. Professional Engineer Telephone Numbers...
   Telephone: (904) 665-6247 ext. Fax: (904) 665-7376
4. Professional Engineer Email Address: giannb@jea.com
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here [x], if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here [ ], if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here [ ], if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here [ ], if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature 5/22/07
Date

(seal)

* Attach any exception to certification statement.

II. FACILITY INFORMATION

A. GENERAL FACILITY INFORMATION

Facility Location and Type

1. Facility UTM Coordinates... Zone 17 East (km) 440.065 North (km) 3359.150		2. Facility Latitude/Longitude... Latitude (DD/MM/SS) 30/21/52 Longitude (DD/MM/SS) 81/37/25	
3. Governmental Facility Code: 4	4. Facility Status Code: A	5. Facility Major Group SIC Code: 49	6. Facility SIC(s): 4911
7. Facility Comment :			

Facility Contact

1. Facility Contact Name: N. Bert Gianazza, P.E. – Environmental Services
2. Facility Contact Mailing Address... Organization/Firm: JEA Street Address: 21 West Church Street City: Jacksonville State: FL Zip Code: 32202
3. Facility Contact Telephone Numbers: Telephone: (904) 665-6247 ext. Fax: (904) 665-7376
4. Facility Contact Email Address: giannb@jea.com

Facility Primary Responsible Official

Complete if an "application responsible official" is identified in Section I. that is not the facility "primary responsible official."

1. Facility Primary Responsible Official Name:
2. Facility Primary Responsible Official Mailing Address... Organization/Firm: Street Address: City: State: Zip Code:
3. Facility Primary Responsible Official Telephone Numbers... Telephone: ( ) - ext. Fax: ( ) -
4. Facility Primary Responsible Official Email Address:

FACILITY INFORMATION

Facility Regulatory Classifications

Check all that would apply *following* completion of all projects and implementation of all other changes proposed in this application for air permit. Refer to instructions to distinguish between a "major source" and a "synthetic minor source."

1. ☐ Small Business Stationary Source	☐ Unknown
2. ☐ Synthetic Non-Title V Source	
3. ☒ Title V Source	
4. ☒ Major Source of Air Pollutants, Other than Hazardous Air Pollutants (HAPs)	
5. ☐ Synthetic Minor Source of Air Pollutants, Other than HAPs	
6. ☐ Major Source of Hazardous Air Pollutants (HAPs)	
7. ☐ Synthetic Minor Source of HAPs	
8. ☒ One or More Emissions Units Subject to NSPS (40 CFR Part 60)	
9. ☐ One or More Emissions Units Subject to Emission Guidelines (40 CFR Part 60)	
10. ☐ One or More Emissions Units Subject to NESHAP (40 CFR Part 61 or Part 63)	
11. ☐ Title V Source Solely by EPA Designation (40 CFR 70.3(a)(5))	
12. Facility Regulatory Classifications Comment:	

FACILITY INFORMATION

List of Pollutants Emitted by Facility

1. Pollutant Emitted	2. Pollutant Classification	3. Emissions Cap [Y or N]?
NOX	A	N
CO	A	N
VOC	B	N
SO2	A	N
PM	A	N
PM10	A	N

B. EMISSIONS CAPS

Facility-Wide or Multi-Unit Emissions Caps

1. Pollutant Subject to Emissions Cap	2. Facility Wide Cap [Y or N]? (all units)	3. Emissions Unit ID No.s Under Cap (if not all units)	4. Hourly Cap (lb/hr)	5. Annual Cap (ton/yr)	6. Basis for Emissions Cap

7. Facility-Wide or Multi-Unit Emissions Cap Comment:

C. FACILITY ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Facility Plot Plan: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. A [ ] Previously Submitted, Date:_____
2. Process Flow Diagram(s): (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. B [ ] Previously Submitted, Date:_____
3. Precautions to Prevent Emissions of Unconfined Particulate Matter: (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. C [ ] Previously Submitted, Date:_____

Additional Requirements for Air Construction Permit Applications

1. Area Map Showing Facility Location:
   [ ] Attached, Document ID:_____ [ ] Not Applicable (existing permitted facility)
2. Description of Proposed Construction, Modification, or Plantwide Applicability Limit (PAL):
   [ ] Attached, Document ID:_____
3. Rule Applicability Analysis:
   [ ] Attached, Document ID:_____
4. List of Exempt Emissions Units (Rule 62-210.300(3), F.A.C.):
   [ ] Attached, Document ID:_____ [ ] Not Applicable (no exempt units at facility)
5. Fugitive Emissions Identification:
   [ ] Attached, Document ID:_____ [ ] Not Applicable
6. Air Quality Analysis (Rule 62-212.400(7), F.A.C.):
   [ ] Attached, Document ID:_____ [ ] Not Applicable
7. Source Impact Analysis (Rule 62-212.400(5), F.A.C.):
   [ ] Attached, Document ID:_____ [ ] Not Applicable
8. Air Quality Impact since 1977 (Rule 62-212.400(4)(e), F.A.C.):
   [ ] Attached, Document ID:_____ [ ] Not Applicable
9. Additional Impact Analyses (Rules 62-212.400(8) and 62-212.500(4)(e), F.A.C.):
   [ ] Attached, Document ID:_____ [ ] Not Applicable
10. Alternative Analysis Requirement (Rule 62-212.500(4)(g), F.A.C.):
    [ ] Attached, Document ID:_____ [ ] Not Applicable

Additional Requirements for FESOP Applications

1. List of Exempt Emissions Units (Rule 62-210.300(3)(a) or (b)1., F.A.C.):
   ☐ Attached, Document ID:_____ ☐ Not Applicable (no exempt units at facility)

Additional Requirements for Title V Air Operation Permit Applications

1. List of Insignificant Activities (Required for initial/renewal applications only):
   ☒ Attached, Document ID: Attach. D ☐ Not Applicable (revision application)

2. Identification of Applicable Requirements (Required for initial/renewal applications, and for revision applications if this information would be changed as a result of the revision being sought):
   ☒ Attached, Document ID: Attach. E
   ☐ Not Applicable (revision application with no change in applicable requirements)

3. Compliance Report and Plan (Required for all initial/revision/renewal applications):
   ☒ Attached, Document ID: Attach. F
   Note: A compliance plan must be submitted for each emissions unit that is not in compliance with all applicable requirements at the time of application and/or at any time during application processing. The department must be notified of any changes in compliance status during application processing.

4. List of Equipment/Activities Regulated under Title VI (If applicable, required for initial/renewal applications only):
   ☐ Attached, Document ID:_____
   ☐ Equipment/Activities On site but Not Required to be Individually Listed:____
   ☒ Not Applicable

5. Verification of Risk Management Plan Submission to EPA (If applicable, required for initial/renewal applications only) :
   ☐ Attached, Document ID:_____ ☒ Not Applicable

6. Requested Changes to Current Title V Air Operation Permit:
   ☒ Attached, Document ID: Attach. G ☐ Not Applicable

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   [x] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   [ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   [X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: Combustion Turbine No. 3 (CT3)

3. Emissions Unit Identification Number: 003

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A		1973	49	[ ] Yes [x] No

9. Package Unit:
   Manufacturer: Westinghouse Model Number: W501G

10. Generator Nameplate Rating: 56.2 MW (nominal)

11. Emissions Unit Comment:

Emissions Unit Control Equipment

1. Control Equipment/Methods Description:
2. Control Device or Method Code(s):

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: 744 (see note below) million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedule Comment: The above heat input level is given in the existing facility Title V permit. Heat input is a function of ambient conditions.	

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: CT3	2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Stack serving CT3.		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: V	6. Stack Height: Approx. 30 feet	7. Exit Diameter: 12.9 feet
8. Exit Temperature: Approx. 800 °F	9. Actual Volumetric Flow Rate: Unknown acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: Dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): No. 2 fuel oil used in Combustion Turbine No. 3.		
2. Source Classification Code (SCC): 2-01-001-01	3. SCC Units: Thousand Gallons Burned	
4. Maximum Hourly Rate: 5.314 (approx.)	5. Maximum Annual Rate: 46,553 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash:	9. Million Btu per SCC Unit: 140
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (744 mmBtu/hr)/(140 mmBtu/thousand gal) = 5.314 thousand gal/hour [(744 mmBtu/hr)/(140 mmBtu/thousand gal)] x (8,760 hr/yr) = 46,553 thousand gal/yr Approximate fuel use rates are provided for informational purposes only and do not constitute limits. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions.		

Segment Description and Rate: Segment __ of __

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX			**NS**
CO			**NS**
SO2			**WP**
PM			**NS**
PM10			**NS**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? ☐ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions:	
11. Potential, Fugitive, and Actual Emissions Comment: This emissions unit has no emissions-limited pollutants. Therefore, no Emissions Unit Pollutant Detail Information forms are needed.	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: V20	2. Basis for Allowable Opacity: [x] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: 20% Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Method 9.	
5. Visible Emissions Comment: The opacity limit and compliance determination requirements are included in existing permit 0310047-014-AV.	

Visible Emissions Limitation: Visible Emissions Limitation ___ of __

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor _ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor _ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. B [ ] Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. H [ ] Previously Submitted, Date _____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [ ] Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. J [ ] Previously Submitted, Date _____
   [ ] Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. K [ ] Previously Submitted, Date _____
   [ ] Not Applicable

6. Compliance Demonstration Reports/Records
   [X] Attached, Document ID: Attach. L
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   [ ] Attached, Document ID: _____ [X] Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☐ Attached, Document ID: Attach. E
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation
   ☐ Attached, Document ID: _____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
5. Acid Rain Part Application
   ☐ Certificate of Representation (EPA Form No. 7610-1)
      ☐ Copy Attached, Document ID: _____
   ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☒ Not Applicable

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   [x] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   [ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   [X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: Combustion Turbine No. 4 (CT4)

3. Emissions Unit Identification Number: 004

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A		1973	49	[ ] Yes [x] No

9. Package Unit:
   Manufacturer: Westinghouse Model Number: W501G

10. Generator Nameplate Rating: 56.2 MW (nominal)

11. Emissions Unit Comment:

Emissions Unit Control Equipment

2. Control Equipment/Methods Description:
2. Control Device or Method Code(s):

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: 744 (see note below) million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedule Comment: The above heat input level is shown in the existing facility Title V permit. Heat input is a function of ambient conditions.	

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: CT4	2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Stack serving CT4.		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: V	6. Stack Height: Approx. 30 feet	7. Exit Diameter: 12.9 feet
8. Exit Temperature: Approx. 800 °F	9. Actual Volumetric Flow Rate: Unknown acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: Dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): No. 2 fuel oil used in Combustion Turbine No. 4.		
2. Source Classification Code (SCC): 2-01-001-01	3. SCC Units: Thousand Gallons Burned	
4. Maximum Hourly Rate: 5.314 (approx.)	5. Maximum Annual Rate: 46,553 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash:	9. Million Btu per SCC Unit: 140
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (744 mmBtu/hr)/(140 mmBtu/thousand gal) = 5.314 thousand gal/hour [(744 mmBtu/hr)/(140 mmBtu/thousand gal)] x (8,760 hr/yr) = 46,553 thousand gal/yr Approximate fuel use rates are provided for informational purposes only and do not constitute limits. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions.		

Segment Description and Rate: Segment _ of _

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX			**NS**
CO			**NS**
SO2			**WP**
PM			**NS**
PM10			**NS**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? ☐ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions:	
11. Potential, Fugitive, and Actual Emissions Comment: This emissions unit has no emissions-limited pollutants. Therefore, no Emissions Unit Pollutant Detail Information forms are needed.	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: V20	2. Basis for Allowable Opacity: [x] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: 20% Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Method 9.	
5. Visible Emissions Comment: The opacity limit and compliance determination requirements are included in existing permit 0310047-014-AV.	

Visible Emissions Limitation: Visible Emissions Limitation ___ of ___

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor _ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor _ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor _ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. B [ ] Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. H [ ] Previously Submitted, Date _____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [ ] Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. J [ ] Previously Submitted, Date _____
   [ ] Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. K [ ] Previously Submitted, Date _____
   [ ] Not Applicable

6. Compliance Demonstration Reports/Records
   [x] Attached, Document ID: Attach. L
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   [ ] Attached, Document ID: _____ [X] Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☐ Attached, Document ID: _____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID: _____ ☒ Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☐ Attached, Document ID: Attach. E
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation
   ☐ Attached, Document ID: _____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
5. Acid Rain Part Application
   ☐ Certificate of Representation (EPA Form No. 7610-1)
      ☐ Copy Attached, Document ID: _____
   ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☒ Not Applicable

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   [x] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   [ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   [X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: Combustion Turbine No. 5 (CT5)

3. Emissions Unit Identification Number: 005

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A		1973	49	[ ] Yes [x] No

9. Package Unit:
   Manufacturer: Westinghouse Model Number: W501G

10. Generator Nameplate Rating: 56.2 MW (nominal)

11. Emissions Unit Comment:

Emissions Unit Control Equipment

3. Control Equipment/Methods Description:
2. Control Device or Method Code(s):

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: 744 (see note below) million Btu/hr	
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule:	
24 hours/day	7 days/week
52 weeks/year	8,760 hours/year
6. Operating Capacity/Schedule Comment: The above heat input level is shown in the existing facility Title V permit. Heat input is a function of ambient conditions.	

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: CT5	2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Stack serving CT5.		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: V	6. Stack Height: Approx. 30 feet	7. Exit Diameter: 12.9 feet
8. Exit Temperature: Approx. 800 °F	9. Actual Volumetric Flow Rate: Unknown acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: Dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 1

1. Segment Description (Process/Fuel Type): No. 2 fuel oil used in Combustion Turbine No. 5.		
2. Source Classification Code (SCC): 2-01-001-01	3. SCC Units: Thousand Gallons Burned	
4. Maximum Hourly Rate: 5.314 (approx.)	5. Maximum Annual Rate: 46,553 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.5	8. Maximum % Ash:	9. Million Btu per SCC Unit: 140
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (744 mmBtu/hr)/(140 mmBtu/thousand gal) = 5.314 thousand gal/hour [(744 mmBtu/hr)/(140 mmBtu/thousand gal)] x (8,760 hr/yr) = 46,553 thousand gal/yr Approximate fuel use rates are provided for informational purposes only and do not constitute limits. Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions.		

Segment Description and Rate: Segment _ of _

1. Segment Description (Process/Fuel Type):		
2. Source Classification Code (SCC):	3. SCC Units:	
4. Maximum Hourly Rate:	5. Maximum Annual Rate:	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit:
10. Segment Comment:		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX			**NS**
CO			**NS**
SO2			**WP**
PM			**NS**
PM10			**NS**

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted:	2. Total Percent Efficiency of Control:
3. Potential Emissions: lb/hour tons/year	4. Synthetically Limited? ☐ Yes ☐ No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: ☐ 5 years ☐ 10 years
10. Calculation of Emissions:	
11. Potential, Fugitive, and Actual Emissions Comment: This emissions unit has no emissions-limited pollutants. Therefore, no Emissions Unit Pollutant Detail Information forms are needed.	

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 1

1. Visible Emissions Subtype: V20	2. Basis for Allowable Opacity: [x] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: 20% Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: Method 9.	
5. Visible Emissions Comment: The opacity limit and compliance determination requirements are included in existing permit 0310047-014-AV.	

Visible Emissions Limitation: Visible Emissions Limitation ___ of ___

1. Visible Emissions Subtype:	2. Basis for Allowable Opacity: [ ] Rule [ ] Other
3. Allowable Opacity: Normal Conditions: % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance:	
5. Visible Emissions Comment:	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor __ of __

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor __ of __

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor __ of __

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement: ☐ Rule ☐ Other	
4. Monitor Information... Manufacturer: Model Number: Serial Number:	
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. B [ ] Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. H [ ] Previously Submitted, Date _____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [ ] Attached, Document ID: _____ [ ] Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. J [ ] Previously Submitted, Date _____
   [ ] Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
   [X] Attached, Document ID: Attach. K [ ] Previously Submitted, Date _____
   [ ] Not Applicable

6. Compliance Demonstration Reports/Records
   [x] Attached, Document ID: Attach. L
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Previously Submitted, Date: _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] To be Submitted, Date (if known): _____
   Test Date(s)/Pollutant(s) Tested: _____
   _____
   [ ] Not Applicable

   Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
   [ ] Attached, Document ID: _____ [X] Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☐ Attached, Document ID: _____ [x] Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID: _____ [x] Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID: _____ [x] Not Applicable

Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☐ Attached, Document ID: Attach. E
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ [X] Not Applicable
3. Alternative Methods of Operation
   ☐ Attached, Document ID: _____ [X] Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ [X] Not Applicable
5. Acid Rain Part Application
   ☐ Certificate of Representation (EPA Form No. 7610-1)
      ☐ Copy Attached, Document ID: _____
   ☐ Acid Rain Part (Form No. 62-210.900(1)(a))
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
      ☐ Attached, Document ID: _____ ☐ Previously Submitted, Date: _____
   [x] Not Applicable

Additional Requirements Comment

III. EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Application - For Title V air operation permitting only, emissions units are classified as regulated, unregulated, or insignificant. If this is an application for Title V air operation permit, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each regulated and unregulated emissions unit addressed in this application for air permit. Some of the subsections comprising the Emissions Unit Information Section of the form are optional for unregulated emissions units. Each such subsection is appropriately marked. Insignificant emissions units are required to be listed at Section II, Subsection C.

Air Construction Permit or FESOP Application - For air construction permitting or federally enforceable state air operation permitting, emissions units are classified as either subject to air permitting or exempt from air permitting. The concept of an "unregulated emissions unit" does not apply. If this is an application for air construction permit or FESOP, a separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air permitting are required to be listed at Section II, Subsection C.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit Application – Where this application is used to apply for both an air construction permit and a revised/renewal Title V air operation permit, each emissions unit is classified as either subject to air permitting or exempt from air permitting for air construction permitting purposes and as regulated, unregulated, or insignificant for Title V air operation permitting purposes. **The air construction permitting classification must be used to complete the Emissions Unit Information Section of this application for air permit.** A separate Emissions Unit Information Section (including subsections A through I as required) must be completed for each emissions unit subject to air permitting addressed in this application for air permit. Emissions units exempt from air construction permitting and insignificant emissions units are required to be listed at Section II, Subsection C.

If submitting the application form in hard copy, the number of this Emissions Unit Information Section and the total number of Emissions Unit Information Sections submitted as part of this application must be indicated in the space provided at the top of each page.

A. GENERAL EMISSIONS UNIT INFORMATION

Title V Air Operation Permit Emissions Unit Classification

1. Regulated or Unregulated Emissions Unit? (Check one, if applying for an initial, revised or renewal Title V air operation permit. Skip this item if applying for an air construction permit or FESOP only.)

   [X] The emissions unit addressed in this Emissions Unit Information Section is a regulated emissions unit.

   [ ] The emissions unit addressed in this Emissions Unit Information Section is an unregulated emissions unit.

Emissions Unit Description and Status

1. Type of Emissions Unit Addressed in this Section: (Check one)

   [X] This Emissions Unit Information Section addresses, as a single emissions unit, a single process or production unit, or activity, which produces one or more air pollutants and which has at least one definable emission point (stack or vent).

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, a group of process or production units and activities which has at least one definable emission point (stack or vent) but may also produce fugitive emissions.

   [ ] This Emissions Unit Information Section addresses, as a single emissions unit, one or more process or production units and activities which produce fugitive emissions only.

2. Description of Emissions Unit Addressed in this Section: Combustion Turbine No. 7 (CT7)

3. Emissions Unit Identification Number:

4. Emissions Unit Status Code:	5. Commence Construction Date:	6. Initial Startup Date:	7. Emissions Unit Major Group SIC Code:	8. Acid Rain Unit?
A		April, 2000	49	[X] Yes [ ] No

9. Package Unit:
   Manufacturer: General Electric Model Number: PG7241 7FA

10. Generator Nameplate Rating: 170 MW (nominal)

11. Emissions Unit Comment:

Emissions Unit Control Equipment

4. Control Equipment/Methods Description:
Dry low NO_x burners used to control NO_x when firing natural gas.
Water injection used to control NO_x when firing fuel oil.

2. Control Device or Method Code(s): 205, 028

B. EMISSIONS UNIT CAPACITY INFORMATION

(Optional for unregulated emissions units.)

Emissions Unit Operating Capacity and Schedule

1. Maximum Process or Throughput Rate:	
2. Maximum Production Rate:	
3. Maximum Heat Input Rate: 1,623 (LHV) million Btu/hr 1,822 (LHV) million Btu/hr	(Natural gas firing) (Fuel oil firing)
4. Maximum Incineration Rate: pounds/hr tons/day	
5. Requested Maximum Operating Schedule: 24 hours/day 52 weeks/year	7 days/week 4,050 hours/year
6. Operating Capacity/Schedule Comment: The given heat input rates are at 59°F and 60% relative humidity. The maximum heat input rate will vary depending on the turbine inlet conditions. The maximum allowable hours of operation in any 12-month period (MAXHROP) given in Permit 0310047-014-AV is 4,050 hours when firing natural gas and 1,260 hours when firing fuel oil or the hours calculated pursuant to the following formula: MAXHROP = 4050 – (3.215 x ACTHROPFO) Where ACTHROPFO = actual hours of operation using fuel oil.	

C. EMISSION POINT (STACK/VENT) INFORMATION
(Optional for unregulated emissions units.)

Emission Point Description and Type

1. Identification of Point on Plot Plan or Flow Diagram: CT7	2. Emission Point Type Code: 1	
3. Descriptions of Emission Points Comprising this Emissions Unit for VE Tracking: Stack serving CT7.		
4. ID Numbers or Descriptions of Emission Units with this Emission Point in Common:		
5. Discharge Type Code: V	6. Stack Height: 90 feet	7. Exit Diameter: 24 feet
8. Exit Temperature: 1,116 °F	9. Actual Volumetric Flow Rate: 2,378,000 acfm	10. Water Vapor: %
11. Maximum Dry Standard Flow Rate: Dscfm	12. Nonstack Emission Point Height: feet	
13. Emission Point UTM Coordinates... Zone: East (km): North (km):	14. Emission Point Latitude/Longitude... Latitude (DD/MM/SS) Longitude (DD/MM/SS)	
15. Emission Point Comment:		

D. SEGMENT (PROCESS/FUEL) INFORMATION

Segment Description and Rate: Segment 1 of 2

1. Segment Description (Process/Fuel Type): Natural gas used in the Combustion Turbine No. 7.		
2. Source Classification Code (SCC): 2-01-002-01	3. SCC Units: Million Cubic Feet Burned	
4. Maximum Hourly Rate: 1.591 (approx.)	5. Maximum Annual Rate: 6,444 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur:	8. Maximum % Ash:	9. Million Btu per SCC Unit: 1,020
10. Segment Comment: Approximate fuel use rate calculations: (1,623 mmBtu/hr)/(1,020 mmBtu/million scf) = 1.591 million scf/hour [(1,623 mmBtu/hr)/(1,020 mmBtu/million scf)] x (4,050 hr/yr) = 6,444 million scf/yr Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions. Approximate fuel use rates are provided for informational purposes only and do not constitute limits.		

Segment Description and Rate: Segment 2 of 2

1. Segment Description (Process/Fuel Type): No. 2 fuel oil used in the Combustion Turbine No. 7.		
2. Source Classification Code (SCC): 2-01-001-01	3. SCC Units: Thousand Gallons Burned	
4. Maximum Hourly Rate: 13.0 (approx.)	5. Maximum Annual Rate: 16,398 (approx.)	6. Estimated Annual Activity Factor:
7. Maximum % Sulfur: 0.05	8. Maximum % Ash:	9. Million Btu per SCC Unit: 140
10. Segment Comment: Approximate fuel use rate calculations: (heat input at HHV)/(fuel HHV) = hourly rate (1,822 mmBtu/hr)/(140 mmBtu/kgal) = 13.0 kgal/hour [(1,822 mmBtu/hr)/(140 mmBtu/kgal)] x (1,260 hr/yr) = 16,398 kgal/yr Actual fuel use rates are a function of the fuel heating value and the emission unit operating conditions. Approximate fuel use rates are provided for informational purposes only and do not constitute limits.		

E. EMISSIONS UNIT POLLUTANTS

List of Pollutants Emitted by Emissions Unit

1. Pollutant Emitted	2. Primary Control Device Code	3. Secondary Control Device Code	4. Pollutant Regulatory Code
NOX	**205**	**028 (when firing fuel oil)**	**EL**
CO			**EL**
VOC			**EL**
SO2			**EL**
PM			**EL**
PM10			

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: NOX	2. Total Percent Efficiency of Control:
3. Potential Emissions: 318 lb/hour 200 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: [ ] 5 years [ ] 10 years

10. Calculation of Emissions:

Emission limits from Permit No. 0310047-014-AV is 15 ppmvd at 15% O_2 (on a 24-hour block average) and 99 lb/hr when firing natural gas.

Emission limits from Permit No. 0310047-014-AV is 42 ppmvd at 15% O_2 (on a 24-hour block average) and 318 lb/hr (at ISO conditions) when firing No. 2 fuel oil.

Permit No. 0310047-014-AV also limits total annual NO_x emissions to 200 tons or less on a 12 month rolling average basis.

11. Potential, Fugitive, and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 15 ppmvd	4. Equivalent Allowable Emissions: 99 lb/hour 200 tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): The given allowable emissions value is from the existing facility Title V permit.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 42 ppmvd	4. Equivalent Allowable Emissions: 318 lb/hour 200 tons/year
5. Method of Compliance: CEMS	
6. Allowable Emissions Comment (Description of Operating Method): The given allowable emissions value is from the existing facility Title V permit.	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: CO	2. Total Percent Efficiency of Control:
3. Potential Emissions: 97 lb/hour 97.2 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: [ ] 5 years [ ] 10 years

10. Calculation of Emissions:

Hourly emissions:

Emission limits from Permit No. 0310047-014-AV are 15 ppmvd at 15% O_2 and 48 lb/hr when firing natural gas.

Emission limits from Permit No. 0310047-014-AV is 20 ppmvd at 15% O_2 and 97 lb/hr when firing No. 2 fuel oil.

Annual emissions (natural gas) = [(48 lb/hr) x (4,050 hr/yr)] / (2,000 lb/ton) = 97.2 ton/yr
Annual emissions (fuel oil) = [(97 lb/hr) x (1,260 hr/yr)] / (2,000 lb/ton) = 61.1 ton/yr
The Maximum annual CO emissions rate is 97.2 ton/yr

11. Potential, Fugitive, and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 15 ppmvd at 15% O_2 48 lb/hr	4. Equivalent Allowable Emissions: 48 lb/hour 97.2 tons/year
5. Method of Compliance: EPA Method 10 stack test	
6. Allowable Emissions Comment (Description of Operating Method): The given allowable emissions value is from the existing facility Title V permit.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 20 ppmvd at 15% O_2 97 lb/hr	4. Equivalent Allowable Emissions: 97 lb/hour 61.1 tons/year
5. Method of Compliance: EPA Method 10 stack test	
6. Allowable Emissions Comment (Description of Operating Method): The given allowable emissions value is from the existing facility Title V permit.	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: PM/PM10	2. Total Percent Efficiency of Control:
3. Potential Emissions: 17 lb/hour 21.7 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code: 0 and 3
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: [ ] 5 years [ ] 10 years

10. Calculation of Emissions:

Emission limits from Permit No. 0310047-014-AV is 17 lb/hr (non-condensable only) when firing No. 2 fuel oil. This is the maximum hourly PM/PM_{10} emissions rate.
Emission factor from AP-42, Section 3.1, Table 3.1-2a is 0.0066 lb/mmBtu when burning natural gas.
Hourly PM/PM_{10} emissions when burning natural gas:
(0.0066 lb/mmBtu)(1,623 mmBtu/hr) = 10.7 ton/yr
Annual PM/PM_{10} emissions rate (burning natural gas):
(0.0066 lb/mmBtu)(1,623 mmBtu/hr)(4,050 hr/yr)(ton/2,000 lb) = 21.7 ton/yr

11. Potential, Fugitive, and Actual Emissions Comment:

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 1

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 17 lb/hr (non-condensable only) when firing fuel oil	4. Equivalent Allowable Emissions: 17 lb/hour 10.7 tons/year
5. Method of Compliance: Stack test or opacity	
6. Allowable Emissions Comment (Description of Operating Method): The given allowable emissions value is from the existing Title V permit.	

Allowable Emissions Allowable Emissions __ of __

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

Allowable Emissions Allowable Emissions __ of ___

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: SO2	2. Total Percent Efficiency of Control:
3. Potential Emissions: 98 lb/hour 61.7 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: [ ] 5 years [ ] 10 years

10. Calculation of Emissions:

Hourly emissions:
Emission limits from Permit No. 0310047-014-AV are 9.7 lb/hr when firing natural gas and 98 lb/hr when firing No. 2 fuel oil.

Annual emissions:
Annual emissions (natural gas) = [(9.7 lb/hr) x (4,050 hr/yr)] / (2,000 lb/ton) = 19.6 ton/yr
Annual emissions (fuel oil) = [(98 lb/hr) x (1,260 hr/yr)] / (2,000 lb/ton) = 61.7 ton/yr
The Maximum annual SO_2 emissions rate is 61.7 ton/yr

11. Potential, Fugitive, and Actual Emissions Comment: The potential annual emissions rate is given for informational purposes only and does not constitute a limit.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 9.7 lb/hr (natural gas)	4. Equivalent Allowable Emissions: 9.7 lb/hour 19.6 tons/year
5. Method of Compliance: Natural gas monitoring schedule	
6. Allowable Emissions Comment (Description of Operating Method): The given allowable emissions value and the natural gas monitoring schedule are given in the existing facility Title V permit.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 98 lb/hr and 0.05% sulfur, by weight, in the fuel oil	4. Equivalent Allowable Emissions: 98 lb/hour 61.7 tons/year
5. Method of Compliance: Fuel oil analyses	
6. Allowable Emissions Comment (Description of Operating Method): The given allowable emissions value and maximum fuel sulfur content are given in the existing facility Title V permit.	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

F1. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION – POTENTIAL, FUGITIVE, AND ACTUAL EMISSIONS

(Optional for unregulated emissions units.)

Potential, Estimated Fugitive, and Baseline & Projected Actual Emissions

Complete for each pollutant identified in Subsection E if applying for an air construction permit or concurrent processing of an air construction permit and a revised or renewal Title V permit. Complete for each emissions-limited pollutant identified in Subsection E if applying for an air operation permit.

1. Pollutant Emitted: VOC	2. Total Percent Efficiency of Control:
3. Potential Emissions: 19 lb/hour 12.0 tons/year	4. Synthetically Limited? [X] Yes [ ] No
5. Range of Estimated Fugitive Emissions (as applicable): to tons/year	
6. Emission Factor: Reference:	7. Emissions Method Code:
8.a. Baseline Actual Emissions (if required): tons/year	8.b. Baseline 24-month Period: From: To:
9.a. Projected Actual Emissions (if required): tons/year	9.b. Projected Monitoring Period: [ ] 5 years [ ] 10 years

10. Calculation of Emissions:

Maximum hourly emissions:
Natural gas = 2.9 lb/hr
Fuel oil = 19 lb/hr

Annual emissions:
Annual emissions (natural gas) = [(2.9 lb/hr) x (4,050 hr/yr)] / (2,000 lb/ton) = 5.9 ton/yr
Annual emissions (fuel oil) = [(19 lb/hr) x (1,260 hr/yr)] / (2,000 lb/ton) = 12.0 ton/yr
The Maximum annual VOC emissions rate is 12.0 ton/yr

11. Potential, Fugitive, and Actual Emissions Comment: The potential annual emissions rate is given for informational purposes only and does not constitute a limit.

F2. EMISSIONS UNIT POLLUTANT DETAIL INFORMATION - ALLOWABLE EMISSIONS

Complete if the pollutant identified in Subsection F1 is or would be subject to a numerical emissions limitation.

Allowable Emissions Allowable Emissions 1 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 1.4 ppmvd and 2.9 lb/hr when firing natural gas	4. Equivalent Allowable Emissions: 2.9 lb/hour 5.9 tons/year
5. Method of Compliance: The CO emission limit is used as a surrogate.	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions and method of compliance are given in the existing facility Title V permit.	

Allowable Emissions Allowable Emissions 2 of 2

1. Basis for Allowable Emissions Code: OTHER	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units: 3.5 ppmvd and 19 lb/hr when firing fuel oil	4. Equivalent Allowable Emissions: 19 lb/hour 12.0 tons/year
5. Method of Compliance: The CO emission limit is used as a surrogate.	
6. Allowable Emissions Comment (Description of Operating Method): The allowable emissions and method of compliance are given in the existing facility Title V permit.	

Allowable Emissions Allowable Emissions _ of _

1. Basis for Allowable Emissions Code:	2. Future Effective Date of Allowable Emissions:
3. Allowable Emissions and Units:	4. Equivalent Allowable Emissions: lb/hour tons/year
5. Method of Compliance:	
6. Allowable Emissions Comment (Description of Operating Method):	

G. VISIBLE EMISSIONS INFORMATION

Complete if this emissions unit is or would be subject to a unit-specific visible emissions limitation.

Visible Emissions Limitation: Visible Emissions Limitation 1 of 2

1. Visible Emissions Subtype: VE10	2. Basis for Allowable Opacity: ☐ Rule ☒ Other
3. Allowable Opacity: Normal Conditions: 10 % Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Reference Method 9	
5. Visible Emissions Comment: Applies when firing natural gas	

Visible Emissions Limitation: Visible Emissions Limitation 2 of 2

1. Visible Emissions Subtype: VE20	2. Basis for Allowable Opacity: ☐ Rule ☒ Other
3. Allowable Opacity: Normal Conditions: 20% Exceptional Conditions: % Maximum Period of Excess Opacity Allowed: min/hour	
4. Method of Compliance: EPA Reference Method 9	
5. Visible Emissions Comment: Applies when firing fuel oil	

H. CONTINUOUS MONITOR INFORMATION

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor 1 of 1

1. Parameter Code: EM	2. Pollutant(s): NOX
3. CMS Requirement:	[X] Rule [ ] Other
4. Monitor Information... Manufacturer: TECO Model Number: 42 CHL	Serial Number: 42CHL-66199-351
5. Installation Date: July 31, 2000	6. Performance Specification Test Date: August 8, 2000
7. Continuous Monitor Comment: Rule:	

Continuous Monitoring System: Continuous Monitor _ of _

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	[ ] Rule [ ] Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

H. CONTINUOUS MONITOR INFORMATION (CONTINUED)

Complete if this emissions unit is or would be subject to continuous monitoring.

Continuous Monitoring System: Continuous Monitor __ of __

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

Continuous Monitoring System: Continuous Monitor ___ of ___

1. Parameter Code:	2. Pollutant(s):
3. CMS Requirement:	☐ Rule ☐ Other
4. Monitor Information... Manufacturer: Model Number:	Serial Number:
5. Installation Date:	6. Performance Specification Test Date:
7. Continuous Monitor Comment:	

I. EMISSIONS UNIT ADDITIONAL INFORMATION

Additional Requirements for All Applications, Except as Otherwise Stated

1. Process Flow Diagram (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
[X] Attached, Document ID: Attach. B [ ] Previously Submitted, Date _____

2. Fuel Analysis or Specification (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
[X] Attached, Document ID: Attach. H [ ] Previously Submitted, Date _____

3. Detailed Description of Control Equipment (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
[X] Attached, Document ID: Attach. I [ ] Previously Submitted, Date _____

4. Procedures for Startup and Shutdown (Required for all operation permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
[X] Attached, Document ID: Attach. J [ ] Previously Submitted, Date _____
[ ] Not Applicable (construction application)

5. Operation and Maintenance Plan (Required for all permit applications, except Title V air operation permit revision applications if this information was submitted to the department within the previous five years and would not be altered as a result of the revision being sought)
[X] Attached, Document ID: Attach. K [ ] Previously Submitted, Date _____
[ ] Not Applicable

6. Compliance Demonstration Reports/Records
[X] Attached, Document ID: Attach. L
Test Date(s)/Pollutant(s) Tested: _____
_____
[ ] Previously Submitted, Date: _____
Test Date(s)/Pollutant(s) Tested: _____
_____
[ ] To be Submitted, Date (if known):_____
Test Date(s)/Pollutant(s) Tested: _____
_____
[ ] Not Applicable

Note: For FESOP applications, all required compliance demonstration records/reports must be submitted at the time of application. For Title V air operation permit applications, all required compliance demonstration reports/records must be submitted at the time of application, or a compliance plan must be submitted at the time of application.

7. Other Information Required by Rule or Statute
[ ] Attached, Document ID: _____ [X] Not Applicable

Additional Requirements for Air Construction Permit Applications

1. Control Technology Review and Analysis (Rules 62-212.400(10) and 62-212.500(7), F.A.C.; 40 CFR 63.43(d) and (e))
   ☐ Attached, Document ID:_____ ☒ Not Applicable
2. Good Engineering Practice Stack Height Analysis (Rule 62-212.400(4)(d), F.A.C., and Rule 62-212.500(4)(f), F.A.C.)
   ☐ Attached, Document ID:_____ ☒ Not Applicable
3. Description of Stack Sampling Facilities (Required for proposed new stack sampling facilities only)
   ☐ Attached, Document ID:_____ ☒ Not Applicable

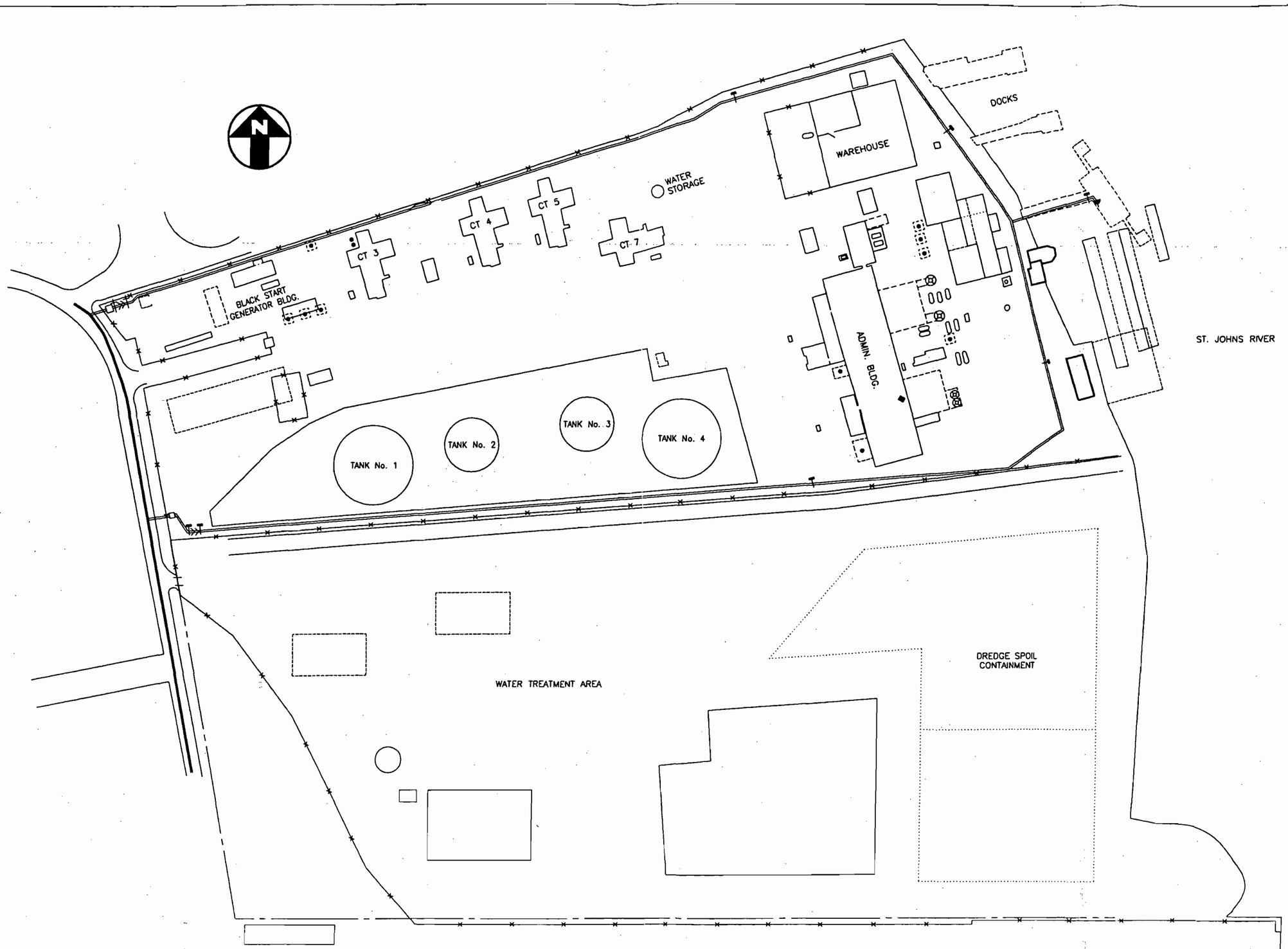
Additional Requirements for Title V Air Operation Permit Applications

1. Identification of Applicable Requirements
   ☒ Attached, Document ID: Attach. E
2. Compliance Assurance Monitoring
   ☐ Attached, Document ID: _____ ☒ Not Applicable
3. Alternative Methods of Operation
   ☐ Attached, Document ID:_____ ☒ Not Applicable
4. Alternative Modes of Operation (Emissions Trading)
   ☐ Attached, Document ID: _____ ☒ Not Applicable
5. Acid Rain Part Application
   ☒ Certificate of Representation (EPA Form No. 7610-1)
      ☒ Copy Attached, Document ID: Attach. M
   ☒ Acid Rain Part (Form No. 62-210.900(1)(a))
      ☒ Attached, Document ID:Attach. M ☐ Previously Submitted, Date:_____
   ☐ Repowering Extension Plan (Form No. 62-210.900(1)(a)1.)
      ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☐ New Unit Exemption (Form No. 62-210.900(1)(a)2.)
      ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☐ Retired Unit Exemption (Form No. 62-210.900(1)(a)3.)
      ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☐ Phase II NOx Compliance Plan (Form No. 62-210.900(1)(a)4.)
      ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☐ Phase II NOx Averaging Plan (Form No. 62-210.900(1)(a)5.)
      ☐ Attached, Document ID:_____ ☐ Previously Submitted, Date:_____
   ☐ Not Applicable

Additional Requirements Comment

Attachment A

Facility Plot Plan

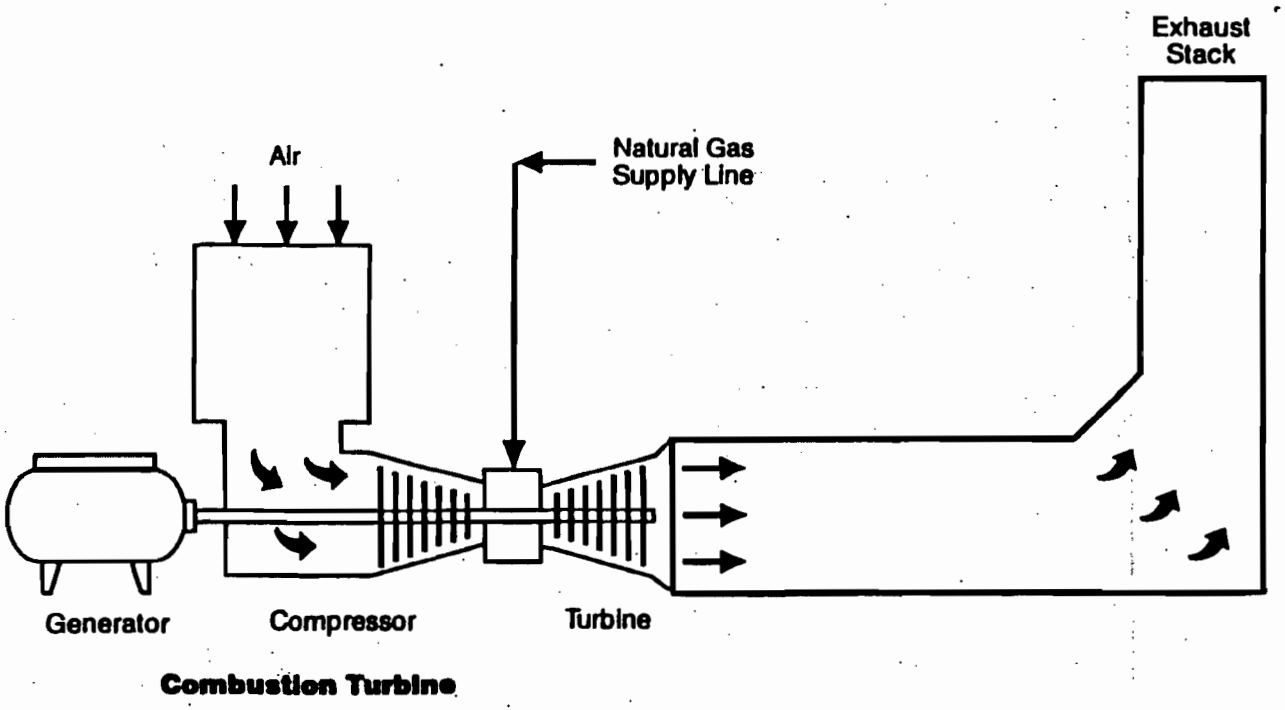


JEA – KENNEDY GENERATING STATION
JACKSONVILLE, FL
SCALE: 1 INCH = 100 FEET

Attachment B

Process Flow Diagram

Simple Cycle-Combustion Turbine Process Flow Diagram



SIMPLE CYCLE COMBUSTION TURBINE

Attachment C

Precautions to Prevent Emissions of Unconfined Particulate Matter

Precautions to Prevent Emissions of Unconfined Particulate Matter

The facility has negligible amounts of unconfined particulate matter emissions as a result of the operation of the facility. Reasonable precautions to control unconfined emissions of particulate matter as listed in Rule 62-296.320(4), FAC will be employed as appropriate.

Attachment D

List of Insignificant Activities

List of Insignificant Activities

List of Proposed Insignificant Activities:

A. Storage Tanks:

1. JEA Tank #5	Magnesium Oxide	10,000 gallons
2. JEA Tank #6	Lube Oil – Units 9/10	9,400 gallons
3. JEA Tank #7	Lube Oil – Units 8/9	4,800 gallons
4. JEA Tank #8	Black Start Diesel	3,000 gallons
5. JEA Tank #9	Mineral Acid	5,000 gallons
6. JEA Tank #10	Caustic	5,000 gallons
7. JEA Tank #11	Hypochloride	15,228 gallons
8. JEA Tank #12	$FeSO_4$	2,500 gallons
9. JEA Tank #15	Sodium Bisulfite	2,500 gallons

B. Emergency Generator.
There is one emergency generator at this site. The emergency generator has historically fired less than 10,000 gallons per year of diesel fuel. The emergency generator draws its fuel from a single diesel fuel oil storage tank that supports the auxiliary boiler (the fuel oil has a maximum fuel sulfur content limit of 0.5%, by weight).

C. Black-start Generators
There are two black-start generators at this site. These generators have historically fired less than 10,000 gallons per year of diesel fuel. They draw their fuel from a single diesel storage tank (the fuel oil delivered is the same as that delivered for the emergency generator, i.e., with a maximum sulfur content of 0.5% sulfur, by weight).

D. Fuel Gas Heater
There is one approximately 3.2 mmBtu/hr natural gas fired fuel gas heater at this site.

List of Unregulated Emission Units/Activities:

A. Emission Unit 010: Storage Tanks 1 and 4

B. Emission Unit 011: Storage Tanks 2 and 3

C. Emission Unit xxx: Storage Tank 13

Attachment E

Identification of Applicable Requirements

Identification of Applicable Requirements

Rule Applicability Analysis for the Entire Facility

The Title V core list of applicable regulations that all Title V sources are presumptively subject to is hereby incorporated by reference.

Applicable facility-wide regulations specified in Operation Permit No. 0310047-014-AV are hereby incorporated by reference.

Rule Applicability Analysis for Combustion Turbine No. 3

NOT APPLICABLE - Federal: 40 CFR Part 63 Subpart YYYY, *National Emission Standards for Stationary Combustion Turbines*. This standard is only applicable to emission units at a facility that is a major source of HAPs. Because the Kennedy Generating Station is not a major source of HAPs, 40 CFR 63 Subpart YYYY does not apply to Combustion Turbine No. 3 (CT3).

NOT APPLICABLE - Federal: 40 CFR Part 60 Subpart KKKK – *Standards of Performance for Stationary Gas Turbines.* Because CT3 was constructed prior to the applicability data of NSPS Subpart KKKK, it is not subject to Subpart KKKK.

NOT APPLICABLE - Federal: 40 CFR Part 60 Subpart GG (Rule 62-204.800(8)(b).39) – *Standards of Performance for Stationary Gas Turbines.* Because CT3 was constructed prior to the applicability data of NSPS Subpart GG, it is not subject to Subpart GG.

NOT APPLICABLE - Federal: Acid Rain Requirements. Per 40 CFR 72.6(b)(1) simple combustion turbines that commenced commercial operation before November 15, 1990 are not affected units under the Acid Rain program.

The following rules are applicable to CT3:

State: Rule 62-296.320(4)(b) – *General Visible Emissions Standard.*

Rule Applicability Analysis for Combustion Turbine No. 4

NOT APPLICABLE - Federal: 40 CFR Part 63 Subpart YYYY, *National Emission Standards for Stationary Combustion Turbines*. This standard is only applicable to emission units at a facility that is a major source of HAPs. Because the Kennedy Generating Station is not a major source of HAPs, 40 CFR 63 Subpart YYYY does not apply to Combustion Turbine No. 4 (CT4).

NOT APPLICABLE - Federal: 40 CFR Part 60 Subpart KKKK – *Standards of Performance for Stationary Gas Turbines.* Because CT4 was constructed prior to the applicability data of NSPS Subpart KKKK, it is not subject to Subpart KKKK.

NOT APPLICABLE - Federal: 40 CFR Part 60 Subpart GG (Rule 62-204.800(8)(b).39) – *Standards of Performance for Stationary Gas Turbines.* Because CT4 was constructed prior to the applicability data of NSPS Subpart GG, it is not subject to Subpart GG.

NOT APPLICABLE - Federal: Acid Rain Requirements. Per 40 CFR 72.6(b)(1) simple combustion turbines that commenced commercial operation before November 15, 1990 are not affected units under the Acid Rain program.

The following rules are applicable to CT4:

State: Rule 62-296.320(4)(b) – *General Visible Emissions Standard.*

Rule Applicability Analysis for Combustion Turbine No. 5

NOT APPLICABLE - Federal: 40 CFR Part 63 Subpart YYYY, *National Emission Standards for Stationary Combustion Turbines.* This standard is only applicable to emission units at a facility that is a major source of HAPs. Because the Kennedy Generating Station is not a major source of HAPs, 40 CFR 63 Subpart YYYY does not apply to Combustion Turbine No. 5 (CT5).

NOT APPLICABLE - Federal: 40 CFR Part 60 Subpart KKKK – *Standards of Performance for Stationary Gas Turbines.* Because CT5 was constructed prior to the applicability data of NSPS Subpart KKKK, it is not subject to Subpart KKKK.

NOT APPLICABLE - Federal: 40 CFR Part 60 Subpart GG (Rule 62-204.800(8)(b).39) – *Standards of Performance for Stationary Gas Turbines.* Because CT5 was constructed prior to the applicability data of NSPS Subpart GG, it is not subject to Subpart GG.

NOT APPLICABLE - Federal: Acid Rain Requirements. Per 40 CFR 72.6(b)(1) simple combustion turbines that commenced commercial operation before November 15, 1990 are not affected units under the Acid Rain program.

The following rules are applicable to CT5:

State: Rule 62-296.320(4)(b) – *General Visible Emissions Standard.*

Rule Applicability Analysis for Combustion Turbine No. 7

NOT APPLICABLE - Federal: 40 CFR Part 63 Subpart YYYY, *National Emission Standards for Stationary Combustion Turbines.* This standard is only applicable to emission units at a facility that is a major source of HAPs. Because the Kennedy Generating Station is not a major source of HAPs, 40 CFR 63 Subpart YYYY does not apply to Combustion Turbine No. 7 (CT7).

NOT APPLICABLE - Federal: 40 CFR Part 60 Subpart KKKK – *Standards of Performance for Stationary Gas Turbines.* Because CT7 was constructed prior to the applicability data of NSPS Subpart KKKK, it is not subject to Subpart KKKK.

The following rules are applicable to CT7:

Federal: 40 CFR Part 60 Subpart GG (Rule 62-204.800(8)(b).39) – *Standards of Performance for Stationary Gas Turbines.*

Federal: 40 CFR Part 60 Subpart A – *General Provisions.*

Federal: 40 CFR Part 72 – *Permits Regulation (Acid Rain)*

Federal: 40 CFR Part 75 – *Continuous Emissions Monitoring*

State: Rule 62-204.800(8)(b)(39) – *40 CFR 60 Subpart GG, Stationary Gas Turbines* - adopted by reference.

State: Rule 62-204.800(8)(d) – *General Provisions Adopted – 40 CFR 60 Subpart A – General Provisions adopted by reference, with exceptions.*

State: Rule 62-296.320(4)(b) – *General Visible Emissions Standard.*

Attachment F

Compliance Report and Plan

Compliance Report and Plan

At the time of the filing of this application, all units are in compliance with applicable rules and regulations.

If new regulatory requirements become applicable in the future, or if any non-compliance items are discovered after submittal of this application, the necessary steps will be taken to ensure compliance in a timely manner.

Attachment G

Requested Changes to Current Title V Air Operation Permit

Requested Changes to Current Title V Air Operation Permit

1. Condition 11 requires that all compliance information be submitted to the ERMD-EQD and the Department's Northeast District Office. It is requested that this condition be changed to require that the compliance related notifications only be submitted to ERMD-EQD.

2. Condition A.9 and B.30 requires that compliance with the liquid fuel sulfur limit be demonstrated by means of a fuel analysis provided by the vendor. We request that these two conditions be changed to allow for the fuel analysis to be conducted by other entities, such as included in Condition B.21 of the permit. Condition B.21 reads "... Analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any qualified agency pursuant to 40 CFR 60.335(e)."

3. Condition B.1 includes a requirement to provide manufacturer's curves corrected for site conditions within 45 days of completing the initial compliance testing. Since this requirement was met years ago, we request that it be deleted from the permit simply as a cleanup measure.

4. Condition B.6 includes a requirement to provide manufacturer's emissions performance versus load diagrams for the DLN systems prior to their installation. Since this requirement was met years ago, we request that it be deleted from the permit simply as a cleanup measure.

5. Condition B.35, in the second line, we suggest changing "the office" to "ERMD-EQD" and in line 3 we suggest changing "Department and/or the EQD" to "ERMD-EQD".

Attachment H

Fuel Analysis or Specification

Fuel Analysis or Specification

Fuel for CT3, CT4, and CT5 is specified as No. 2 fuel oil containing no more than 0.5 percent sulfur, by weight.

Fuel for CT7 is specified as pipeline natural gas or No. 2 fuel oil containing no more than 0.05 percent sulfur, by weight.

Recent natural gas and fuel oil analyses are attached.

SGS

September 11, 2006

JEA
P.O. Box 4910
Jacksonville, FL 32201-4910

CERTIFICATE OF ANALYSIS

REFERENCE:	LINE SAMPLING
SAMPLED BY:	JEA DATED 09-07-06
SAMPLE MARKS:	KENNEDY GENERATING STATION
PRODUCT:	NATURAL GAS
OUR REF:	08-8375-01

Accordingly, we report the following results:

TEST	METHOD	RESULTS
HYDROGEN SULFIDE	ASTM D-5504	0.4 ppm
HYDROGEN SULFIDE	ASTM D-5504	0.025 gr/100 ft^3
TOTAL SULFUR	ASTM D-5504	1.0 ppm
TOTAL SULFUR	ASTM D-5504	0.0625 gr/100 ft^3

ND = NOT DETECTED

/E/: Eric L. Falls, Operations Manager, Tampa
SGS NORTH AMERICA INC.
MINERALS SERVICES DIVISION

ELF

SGS

September 11, 2006

JEA
P.O. Box 4910
Jacksonville, FL 32201-4910

CERTIFICATE OF ANALYSIS

REFERENCE:	LINE SAMPLING
SAMPLED BY:	JEA DATED 09-07-06
SAMPLE MARKS:	KENNEDY GENERATING STATION
PRODUCT:	NATURAL GAS
OUR REF:	08-8375-01

COMPONENTS, MOLE %

TEST	METHOD	RESULTS
METHANE	ASTM D-1945	96.173
ETHANE	ASTM D-1945	2.0151
PROPANE	ASTM D-1945	0.36061
I-BUTANE	ASTM D-1945	0.10844
N-BUTANE	ASTM D-1945	0.08488
NEO-PENTANE	ASTM D-1945	ND
I-PENTANE	ASTM D-1945	0.04854
N-PENTANE	ASTM D-1945	0.02511
N-HEXANES	ASTM D-1945	0.00655
N-HEPTANES	ASTM D-1945	0.00260
N-OCTANES	ASTM D-1945	ND
N-NONANES	ASTM D-1945	ND
N-DECANES	ASTM D-1945	ND
HENDECANES	ASTM D-1945	ND
DODECANES	ASTM D-1945	ND
TRIDECANES	ASTM D-1945	ND
TETRADECANES	ASTM D-1945	ND
HYDROGEN	ASTM D-1945	ND
NITROGEN	ASTM D-1945	0.39918
OXYGEN	ASTM D-1945	ND
ARGON	ASTM D-1945	ND
CARBON DIOXIDE	ASTM D-1945	.775522
CARBON MONOXIDE	ASTM D-1945	ND
WATER	ASTM D-1945	ND

JEA
P.O. Box 4910
Jacksonville, FL 32201-4910

CERTIFICATE OF ANALYSIS – 08-8375-01 (continued)

		RESULTS
CALCULATED PROPERTIES		
RELATIVE DENSITY	ASTM D-3588	0.5821
COMPRESSIBILITY FACTOR	ASTM D-3588	0.9978
HEATING VALUE, BTU/cf, GROSS, 14.73 psia, 60 deg. F		
SATURATED	ASTM D-3588	1010
DRY - HIGHER HEATING VALUE	ASTM D-3588	1028
NET - LOWER HEATING VALUE	ASTM D-3588	927

ND = NOT DETECTED

/S/: Eric L. Falls, Operations Manager, Tampa
SGS NORTH AMERICA INC.
MINERALS SERVICES DIVISION

ELF

INSPECTORATE

CERTIFICATE OF ANALYSIS

JOB NO.	TA13614
LAB NO.	L060630118

VESSEL	QUARTERLY INVENTORY	REPORT DATE	07/14/06
PRODUCT	# 2 FUEL OIL		
TERMINAL/PORT	JEA KENNEDY - JACKSONVILLE, FL		
SAMPLE FROM	SHORE TANK # 3	DATE SAMPLED	06/30/06
SAMPLE SUBMITTED BY	INSPECTORATE AMERICA CORP. - TAMPA, FL		
ANALYSIS PERFORMED BY	INSPECTORATE AMERICA CORP. - TAMPA, FL		
CLIENT(S) REF.			

TEST	METHOD	RESULTS
GRAVITY, API @ 60 °F	D 287	37.3
HEAT OF COMBUSTION, BTU/GAL	D 240	139,174
SULFUR, WT%	D 4294	0.0292
NITROGEN, PPM	D 3228	< 100
ASH, WT%	D 482	< 0.01
BACTERIAL GROWTH, ORGANISMS / ML	LIQUI-CULT	10^2 Light
FUNGAL GROWTH, ORGANISMS / ML	LIQUI-CULT	10 Light

Ted Gabric

INSPECTORATE AMERICA

TAMPA 1-06

Attachment I

Detailed Description of Control Equipment

Detailed Description of Control Equipment

Combustion Turbine No. 7 is equipped with dry low NO_x burners and water injection to control NO_x emissions during natural gas and fuel oil firing, respectively. A detailed description of the control equipment is summarized in the attached Technical Evaluation and Preliminary Determination document from the CT7 construction permit documentation.

TECHNICAL EVALUATION

AND

PRELIMINARY DETERMINATION

Jacksonville Electric Authority

Kennedy Generating Station
170 Megawatt Simple Cycle Peaking Unit

Duval County

DEP File No. 0310047-002-AC

Department of Environmental Protection
Division of Air Resources Management
Bureau of Air Regulation

January 29, 1999

1. APPLICATION INFORMATION

1.1 Applicant Name and Address

Jacksonville Electric Authority (JEA)
21 West Church Street
Jacksonville, Florida 32202-3139

Authorized Representative: Walter P. Bussels, Managing Director & CEO

1.2 Reviewing and Process Schedule

10-30-98: Date of Receipt of Application
11-25-98: DEP completeness request
12-23-98: Application deemed complete.
01-26-99: Issued Intent

2. FACILITY INFORMATION

2.1 Facility Location

Refer to Figure 1. The JEA Kennedy Generating Station is located at 4215 Talleyrand Ave in Jacksonville, Duval County. The UTM coordinates of this facility are Zone 17; 440.0 km E; 3,591.0 km N.

2.2 Standard Industrial Classification Codes (SIC)

Industry Group No.	49	Electric, Gas, and Sanitary Services
Industry No.	4911	Electric Services

2.3 Facility Category

The JEA Kennedy Generating Station produces electric power from three natural gas and fuel oil-fired steam units with a combined generating capacity of 250 megawatts (MW), a 21 MW natural gas and fuel oil-fired auxiliary boiler, and three No. 2 distillate fuel oil-fired simple cycle combustion turbines-electrical generator with a combined capacity of approximately 170 MW.

This facility is within an industry included in the list of the 28 Major Facility Categories per Table 62-212.400-1, F.A.C. Because emissions are greater than 100 TPY for at least one criteria pollutant, the facility is also a major facility with respect to Rule 62-212.400, Prevention of Significant Deterioration (PSD). Per Table 62-212.400-2, modifications at the facility resulting in emissions increases greater than 40 TPY of NO_X or SO_2, 25/15 TPY of PM/PM_{10}, or 3 TPY of fluorides (F) require review per the PSD rules and a determination for Best Available Control Technology (BACT) per Rule 62-212.400, F.A.C. The present modification results in net emissions decreases or less-than-significant increases in PSD pollutants. Therefore the modification is not subject to PSD.

The facility is classified as a Major or Title V Source of air pollution because emissions of at least one regulated air pollutant, such as particulate matter (PM/PM_{10}), sulfur dioxide (SO_2), nitrogen oxides (NO_X), carbon monoxide (CO), or volatile organic compounds (VOC) exceeds 100 TPY.

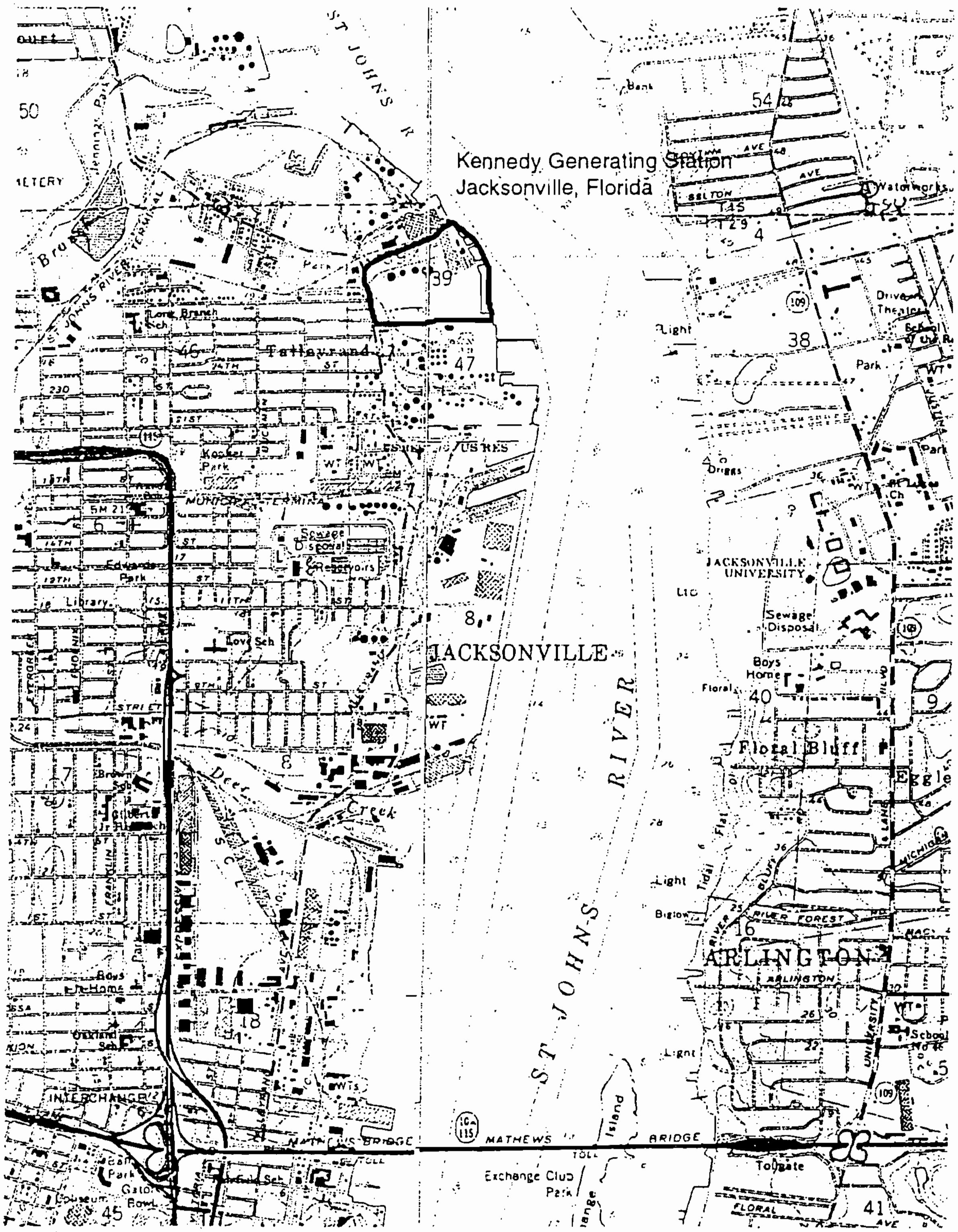


Figure 1 - Location of JEA kennedy Generating Station

3. PROJECT DESCRIPTION

This permit addresses the following emissions unit:

EMISSION UNIT NO.	SYSTEM	EMISSION UNIT DESCRIPTION
00X	Power Generation	One 170 MW Combustion Turbine-Electrical Generator

JEA proposes to install a nominal 170 MW combustion turbine-electrical generator. The proposed unit is a General Electric PG 7241 FA combustion turbine that will burn natural gas and No. 2 distillate fuel oil. It will operate in simple cycle mode and intermittent duty. This turbine will replace an existing 150 MW natural gas and fuel oil-fired boiler identified by JEA as KE10 (ARMS Emission Unit 009) at the Kennedy Generating Station in Duval County. The project also includes a 90-foot new stack .

The prime mover and source of air polution will be a General Electric PG7241FA (7FA) combustion turbine-electrical generator. It will be equipped with Dry Low NO_X (DLN-2.6) combustors tuned to control NO_X emissions to 15 ppmvd at 15% O_2 between 50 and 100% of full load conditions durinng normal operations. Both natural gas and maximum 0.05 % sulfur fuel oil will be used in the unit.

A photgraph of a GE 7001FA (a predecessor of the PG 7241FA) is shown in Figure 2. An internal view is shown in Figure 3.

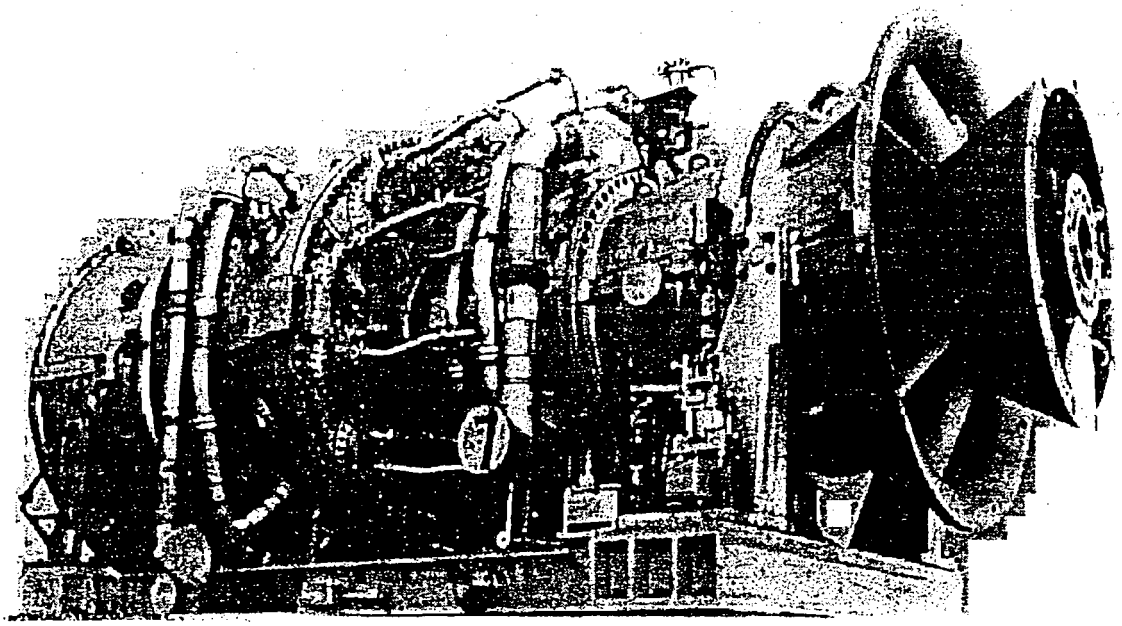


Figure 2 - Photograph of General Electric MS 7001FA Combustion Turbine

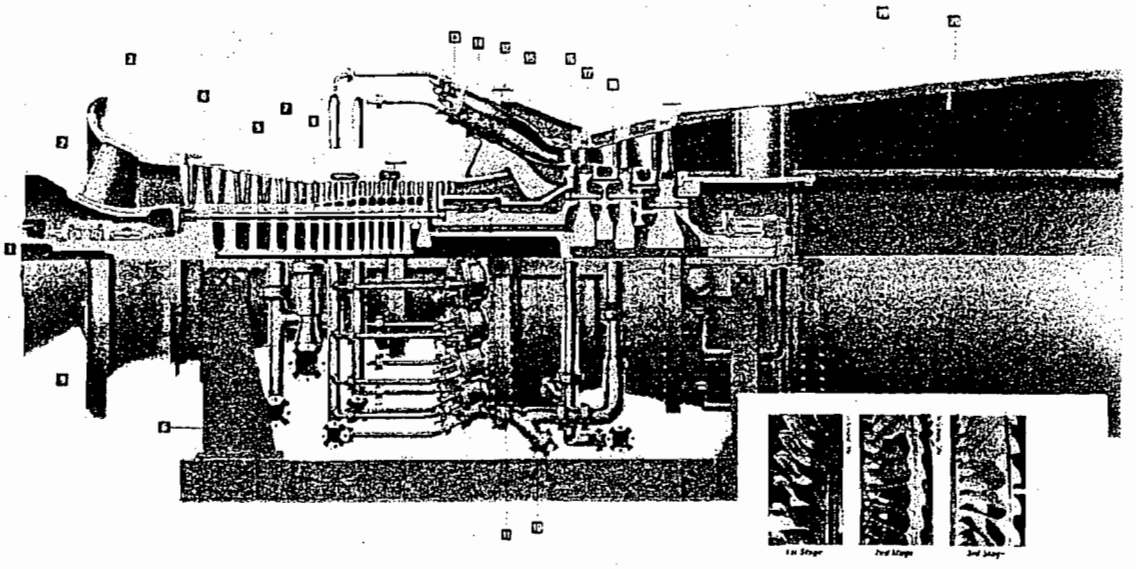


Figure 3 - Internal View of General Electric MS 7001FA Combustion Turbine

Hours of operation will be limited to 4050 hours per year on natural gas or 1260 hours per year on fuel oil. An algorithm is proposed by JEA to operate varying combinations of hours on natural gas and or fuel oil such that the maximum emissions do not exceed those related with exclusive firing of either fuel.

This combustion turbine will have a heat input of 1,623 million Btu per hour (natural gas) and 1822 million Btu per hour (fuel oil), *lower* heating value (MMBtu/hr, LHV) referenced to 59°F and 60 % relative humidity. At those heat input rates and conditions, the gross power output from the elcctrical generator is 173 MW for gas and 182 MW for oil. Depending on compressor inlet conditions, full load power capacity will range from approximately 150 to 187 MW while burning gas and 160 to 191 while burning fuel oil.

Emission decreases will occur for carbon monoxide (CO), sulfur dioxide (SO_2), sulfuric acid mist ($H_2SO_{4\ mist}$ or SAM), particulate matter (PM/PM_{10}), volatile organic compounds (VOC) and nitrogen oxides (NO_X). Net emission changes of these pollutants will be less than the significant emission levels per Table 62-212.400-2, F.A.C. Therefore review for the Prevention of Significant Deterioration (PSD) is not required.

According to the application, this unit will emit approximately 200 tons per year (TPY) of NO_X, 97 TPY of CO, 18 TPY of PM/PM_{10}, 62 TPY of SO_2, 6 TPY of VOC, and 6 TPY of SAM.

4. PROCESS DESCRIPTION

Much of the following discussion is from a 1993 EPA document on Alternative Control Techniques for NO_X Emissions from Stationary Gas turbines.[1] Project specific information is interspersed where appropriate.

A gas turbine is an internal combustion engine that operates with rotary rather than reciprocating motion. Ambient air is drawn into the 18-stage compressor of the GE 7FA where it is compressed by a pressure ratio of about 15 times atmospheric pressure. The compressed air is then directed to the combustor section, where fuel is introduced. ignited, and burned. The combustion section consists of 14 separate can-annular combustors.

Flame temperatures in a typical combustor section can reach 3600 degrees Fahrenheit (°F). Units such as the 7FA operate at lower flame temperatures which minimize NO_X formation. The hot combustion gases are then diluted with additional cool air and directed to the turbine section at temperatures of approximately 2400 °F. Energy is recovered in the turbine section in the form of shaft horsepower, of which typically more than 50 percent is required to drive the internal compressor section. The balance of recovered shaft energy is available to drive the external load unit such as an electrical generator.

In the JEA project, the unit will operate primarily as a peaking unit in the simple cycle mode. Cycle efficiency, defined as a percentage of useful shaft energy output to fuel energy input, is approximately 35 percent for F-Class combustion turbines in the simple cycle mode. In addition to shaft energy output, 1 to 2 percent of fuel input energy can be attributed to mechanical losses. The balance is exhausted from the turbine in the form of heat. Figure 4 is a process flow diagram for this simple cycle operation.

In combined cycle operation, the gas turbine drives an electric generator while the exhausted gases are used to raise steam in a heat recovery steam generator (HRSG). In combined cycle mode, the thermal efficiency of the 7FA can exceed 56 percent.

Additional process information related to the combustor design, and control measures to minimize NO_X formation are given in the control technology section below.

5. RULE APPLICABILITY

The proposed project is subject to preconstruction review requirements under the provisions of Chapter 403, Florida Statutes, and Chapters 62-4, 62-204, 62-210, 62-212, 62-214, 62-296, and 62-297 of the Florida Administrative Code (F.A.C.).

This facility is located in Duval County, an area designated as unclassifiable for sulfur dioxide, as an air quality maintenance area for ozone and particulate matter in accordance with Rule 62-204.360, F.A.C. The proposed project is not subject to review under Rule 62-212.400., F.A.C., Prevention of Significant Deterioration (PSD), because the net emission increases for CO, VOC and NO_X do not exceed the significant emission rates given in Chapter 62-212, Table 62-212.400-2, F.A.C.

The net emissions increase/decrease for all PSD pollutants as a result of this modification are calculated below:

CONTEMPORANEOUS CREDITABLE CHANGES (TPY)

Pollutants	Past Emissions (Boiler KE10)	Future Emissions (170 MW CT)	Increase (decrease)	PSD Significance	PSD Review?
PM/PM_{10}	21.7	18.2	(3.5)	25/15	No
SAM	11.9	6.3	(5.5)	7	No
SO_2	266	62	(204)	40	No
NO_X	161.5	200.5	39	40	No
VOC	1.6	5.7	4.1	40	No
CO	14.5	97.2	82.7	100	No

This evaluation consists of a review of the control technology for PM/PM_{10}, VOC, CO, SO_2, and NO_X to insure that it is sufficient to restrict future emissions to levels lower than past emissions or net increases in emissions to levels less than the significant emission rates as described above. An analysis of the air quality impact from proposed project is required to insure that there are no exceedances of the National or State Ambient Air Quality Standards.

The emission unit affected by this permit shall comply with all applicable provisions of the Florida Administrative Code (including applicable portions of the Code of Federal Regulations incorporated therein) and, specifically, the following Chapters and Rules:

5.1 State Regulations

Chapter 62-4	Permits.
Rule 62-204.220	Ambient Air Quality Protection
Rule 62-204.240	Ambient Air Quality Standards
Rule 62-204.800	Federal Regulations Adopted by Reference
Rule 62-210.300	Permits Required
Rule 62-210.350	Public Notice and Comments
Rule 62-210.370	Reports
Rule 62-210.550	Stack Height Policy
Rule 62-210.650	Circumvention
Rule 62-210.700	Excess Emissions
Rule 62-210.900	Forms and Instructions
Rule 62-212.300	General Preconstruction Review Requirements
Chapter 62-213	Operation Permits for Major Sources of Air Pollution
Chapter 62-214	Requirements For Sources Subject To The Federal Acid Rain Program
Rule 62-296.320	General Pollutant Emission Limiting Standards
Rule 62-297.310	General Test Requirements
Rule 62-297.401	Compliance Test Methods
Rule 62-297.520	EPA Continuous Monitor Performance Specifications

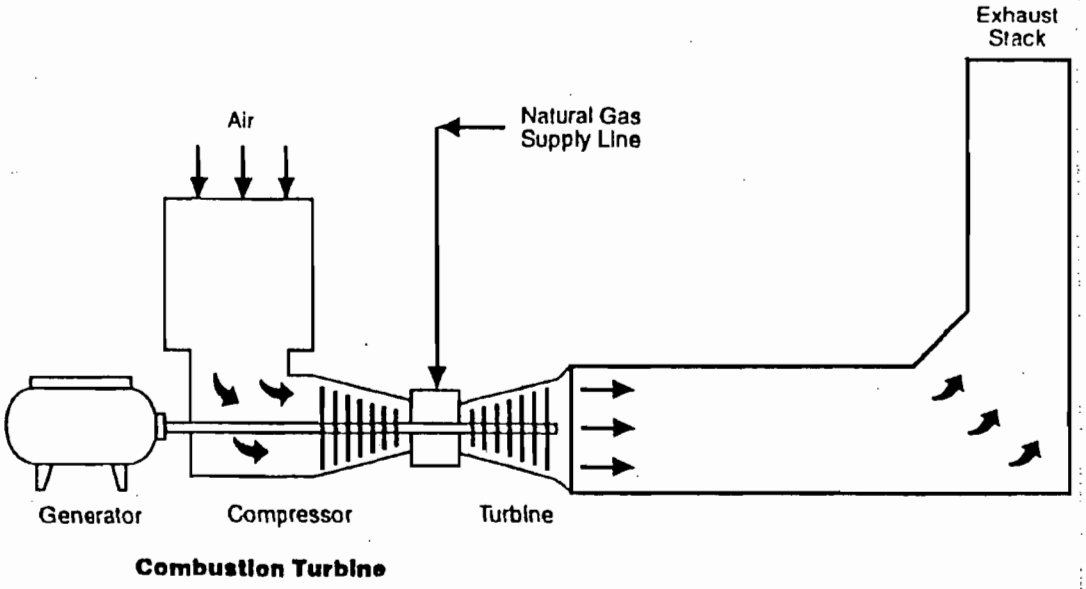


Figure 4 - Simple Cycle Combustion Turbine Process Flow Diagram

5.2 Federal Rules

40 CFR 60	NSPS Subparts GG
40 CFR 60	Applicable sections of Subpart A, General Requirements
40 CFR 72	Acid Rain Permits (applicable sections)
40 CFR 73	Allowances (applicable sections)
40 CFR 75	Monitoring (applicable sections including applicable appendices)
40 CFR 77	Acid Rain Program-Excess Emissions (future applicable requirements)

6. AIR POLLUTION CONTROL TECHNOLOGY

6.1 Applicant Control Technology Proposal

POLLUTANT	CONTROL TECHNOLOGY	PROPOSED LIMIT
PM/PM_{10} (Non-Condensables)	Combustion Controls	9 lb/hr (NG)* 17 lb/hr (F.O.)*
Volatile Organic Compounds	As Above	1.4 ppm (NG) 3.5 ppm (F.O.)
Carbon Monoxide	As Above	15 ppm (NG) 20 ppm (F.O.)
Sulfur Dioxide	As Above	2 gr/100 scf (NG) 0.05% Sulfur Fuel Oil
H_2SO_4	As Above	10 lb/hr
Opacity	As Above	5 (NG) 20 (F.O.)
Nitrogen Oxides	Dry Low NO_X - Natural Gas Wet Injection - Fuel Oil	15 ppm @ 15% O_2 (NG) 42 ppm @ 15% O_2 (F.O.)

6.2 Standards of Performance for New Stationary Sources

The minimum project control technology basis is 40 CFR 60, Subpart GG, Standards of Performance for Stationary Gas Turbines (NSPS). Subpart GG was adopted by the Department by reference in Rule 62-204.800, F.A.C. The key emission limits required by Subpart GG are 75 ppm NO_X @15% O_2. (assuming 25 percent efficiency) and 150 ppm SO_2 @15% O_2 (or <0.8% sulfur in fuel). The proposal is consistent with the NSPS which allows NO_X emissions over 100 ppm for the high efficiency unit to be purchased by JEA. No National Emission Standards for Hazardous Air Pollutants exist for stationary gas turbines.

6.3 Determinations by EPA and States

Recent Best Available Control Technology (BACT) proposals and determinations for NO_X in simple cycle gas turbine projects have ranged from 9 to 15 ppm @ 15% O_2 by Dry Low NO_X Combustion or Hot Selective Catalytic Reduction. Values whiel firing oil are typically 42 ppm by wet injection. In addition to being a simple cycle project, this unit will operate as a "peaker" and emissions will not trigger PSD and BACT. JEA has proposed a limits of 15 ppm for gas firing and 42 ppm for oil firing, which will avoid PSD. These are within the

range of recent simple cycle, peaker BACT limits. Similarly, the proposed CO and VOC limits are within the range of recent BACT determinations for both simple and combined cycle projects.

6.4 Review of Combustion Turbine Control Technologies

A complete discussion of control options was not required because the project is not subject to a Best Available Control Technology Determination. However the applicant discussed the technology to be employed in order to comply with the New Source Performance Standards and the requested limits. The Department has included other information typically included in a complete BACT determination for comparison purposes.

6.4.1 Nitrogen Oxides Formation

Much of the discussion in this section is based on a 1993 EPA document on Alternative Control Techniques for NO_X Emissions from Stationary Gas Turbines. Project-specific information is included where applicable.

Nitrogen oxides form in the gas turbine combustion process as a result of the dissociation of molecular nitrogen and oxygen to their atomic forms and subsequent recombination into seven different oxides of nitrogen. Thermal NO_X forms in the high temperature area of the gas turbine combustor. Thermal NO_X increases exponentially with increases in flame temperature and linearly with increases in residence time. Flame temperature is dependent upon the ratio of fuel burned in a flame to the amount of fuel that consumes all of the available oxygen.

By maintaining a low fuel ratio (lean combustion), the flame temperature will be lower, thus reducing the potential for NO_X formation. Prompt NO_X is formed in the proximity of the flame front as intermediate combustion products. The contribution of Prompt to overall NO_X is relatively small in lean, near-stoichiometric combustors and increases for leaner fuel mixtures. This provides a practical limit for NO_X control by lean combustion.

Fuel NO_X is formed when fuels containing bound nitrogen are burned. This phenomenon is not important when combusting natural gas.

Uncontrolled emissions range from about 100 to over 600 parts per million by volume, dry, corrected to 15 percent oxygen (ppm @15% O_2). For large modern turbines, the Department estimates uncontrolled emissions at approximately 200 ppm @15% O_2.

6.4.2 NO_X Control Techniques

Combustion Controls

The excess air in lean combustion, cools the flame and reduces the rate of thermal NO_X formation. Lean premixing of fuel and air prior to combustion can further reduce NO_X emissions. This is accomplished by minimizing localized fuel-rich pockets (and high temperatures) that can occur when trying to achieve lean mixing within the combustion zones.

The above principle is depicted in Figure 5 for a General Electric can-annular combustor operating on gas. For ignition, warm-up, and acceleration to approximately 20 percent load, the first stage serves as the complete combustor. Flame is present only in the first stage, which is operated as lean stable combustion will permit. With increasing load, fuel is introduced into the secondary stage, and combustion takes place in both stages. When the load reaches approximately 40 percent, fuel is cut off to the first stage and the flame in this stage is extinguished. The venturi ensures the flame in the second stage cannot propagate upstream to the first stage. When the fuel in the first-stage flame is extinguished (as verified by internal flame detectors), fuel is again introduced into the first stage, which becomes a premixing zone to deliver a lean, unburned, uniform mixture to the second stage. The second stage acts as the complete combustor in this configuration.

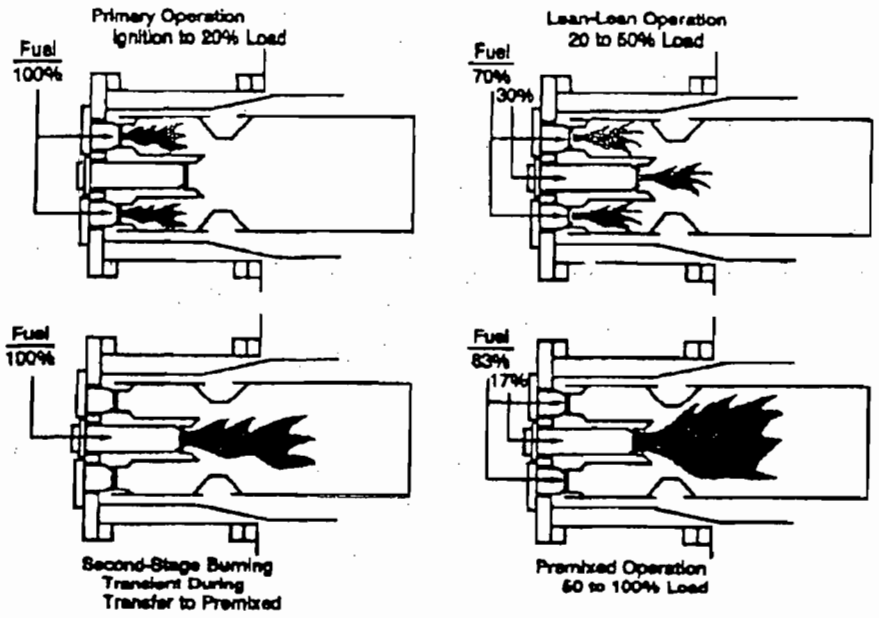
To further reduce NO_X emissions, GE developed the DLN-2 combustor (cross section shown in Figure 5) wherein air usage (other than for premixing) was minimized. The venturi and the centerbody assembly were eliminated and the combustor has a single burning zone. So-called "quaternary fuel" is introduced through pegs located on the circumference of the outward combustion casing.

The emission characteristics of General Electric's DLN 2 combustors are given in Figure 6 (gas) and 7 (fuel oil). NO_X concentrations are higher in the exhaust at lower loads because at lower loads, the combustor do not operate in the lean pre-mix mode. Therefore such a combustor emits NO_X at concentrations of 25 parts per million (ppm) at loads between 50 and 100 percent of capacity, but concentrations as high as 100 ppm at less than 50 percent of capacity.

Simplified cross sectional views of the totally premixed DLN-2.6 combustor to be installed at the JEA project are shown in Figure 8. The combustor is similar to the DLN-2 with the addition of a sixth (center) fuel nozzle to achieve emissions as low as 9 ppm of NO_X and 9 ppm of CO. The expected emission characteristics of General Electric's DLN 2.6 combustors, tuned for the proposed project, are given in Figure 9 (gas). Emissions characteristics while firing oil are expected to be the same as shown for the DLN-2 in Figure 7. Note that VOC comprises a very small amount of the "unburned hydrocarbons" which in turn are mostly non-VOC methane,

In all but the most recent gas turbine combustor designs, the high temperature combustion gases are cooled to an acceptable temperature with dilution air prior to entering the turbine (expansion) section. The sooner this cooling occurs, the lower the thermal NO_X formation. Cooling is also required to protect the first stage nozzle. When this is accomplished by air cooling, the air is injected into the component and is ejected into the combustion gas stream, causing a further drop in combustion gas temperature. This, in turn, results in a lower achievable thermal efficiency for the unit.

Larger units, such as the Westinghouse 501 G or the planned General Electric 7H, use steam in a closed loop system to provide much of the cooling. The fluid is circulated through the internal portion of the nozzle component or around the transition piece between the combustor and the nozzle and does not enter the exhaust stream. Instead it is normally sent



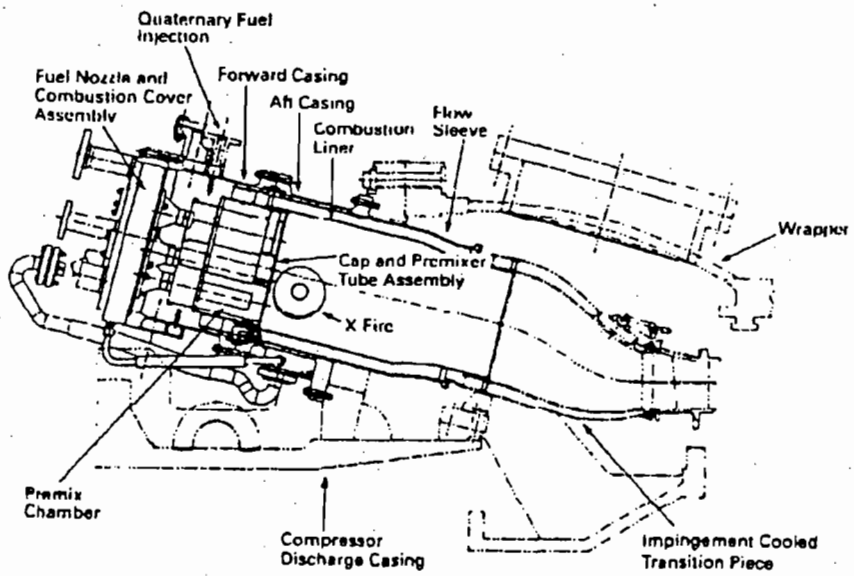


Figure 5 - Dry Low NOx Operating Modes - DLN-1

Cross Section of DLN-2.0

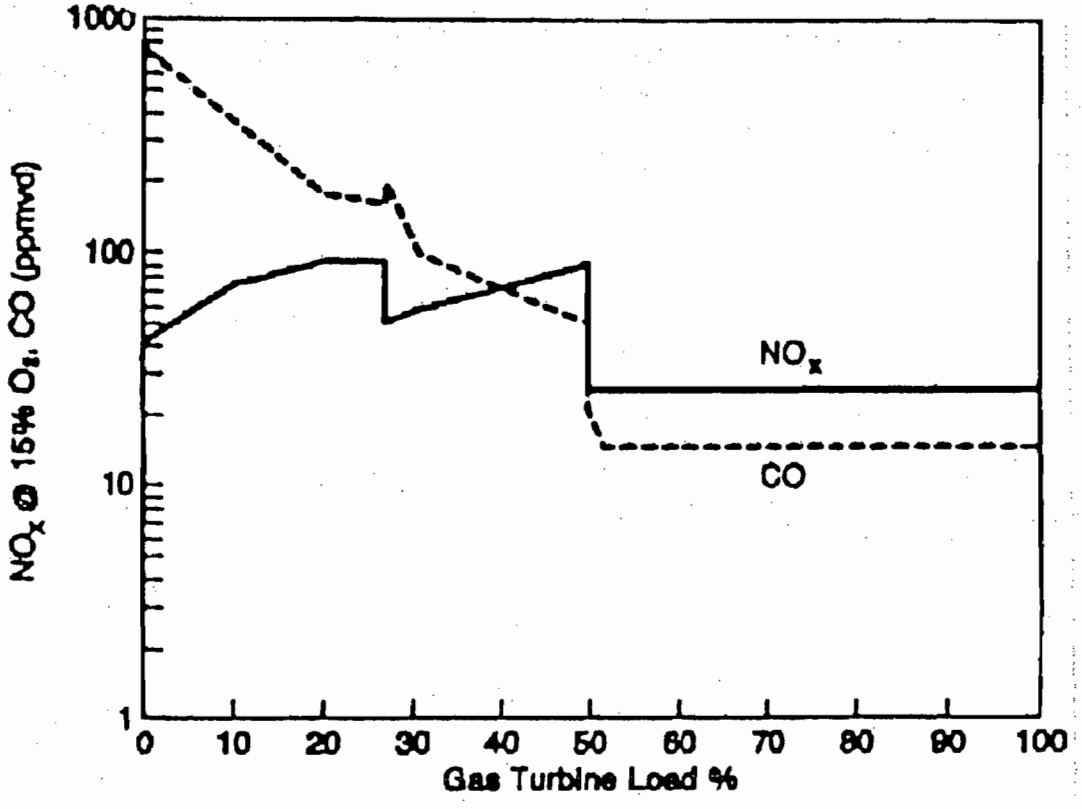


Figure 6 - Emissions Performance Curves for GE DLN-2 Combustor

Firing Natural Gas in a Dual Fuel GE 7FA Combustion Turbine

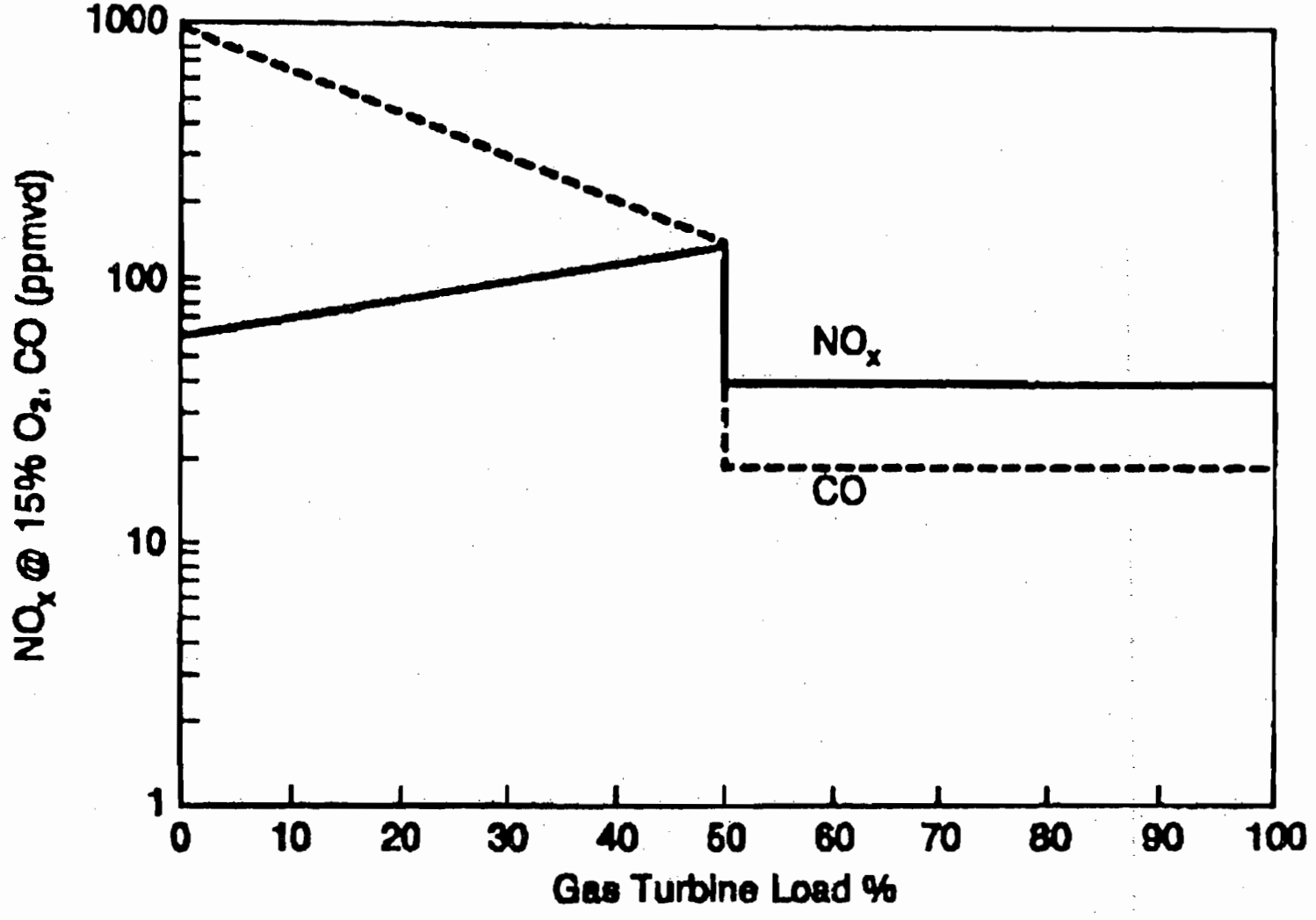


Figure 7 - Emissions Performance Curves for GE DLN-2 Combustor Firing Fuel Oil in Dual Fuel GE 7FA Turbine

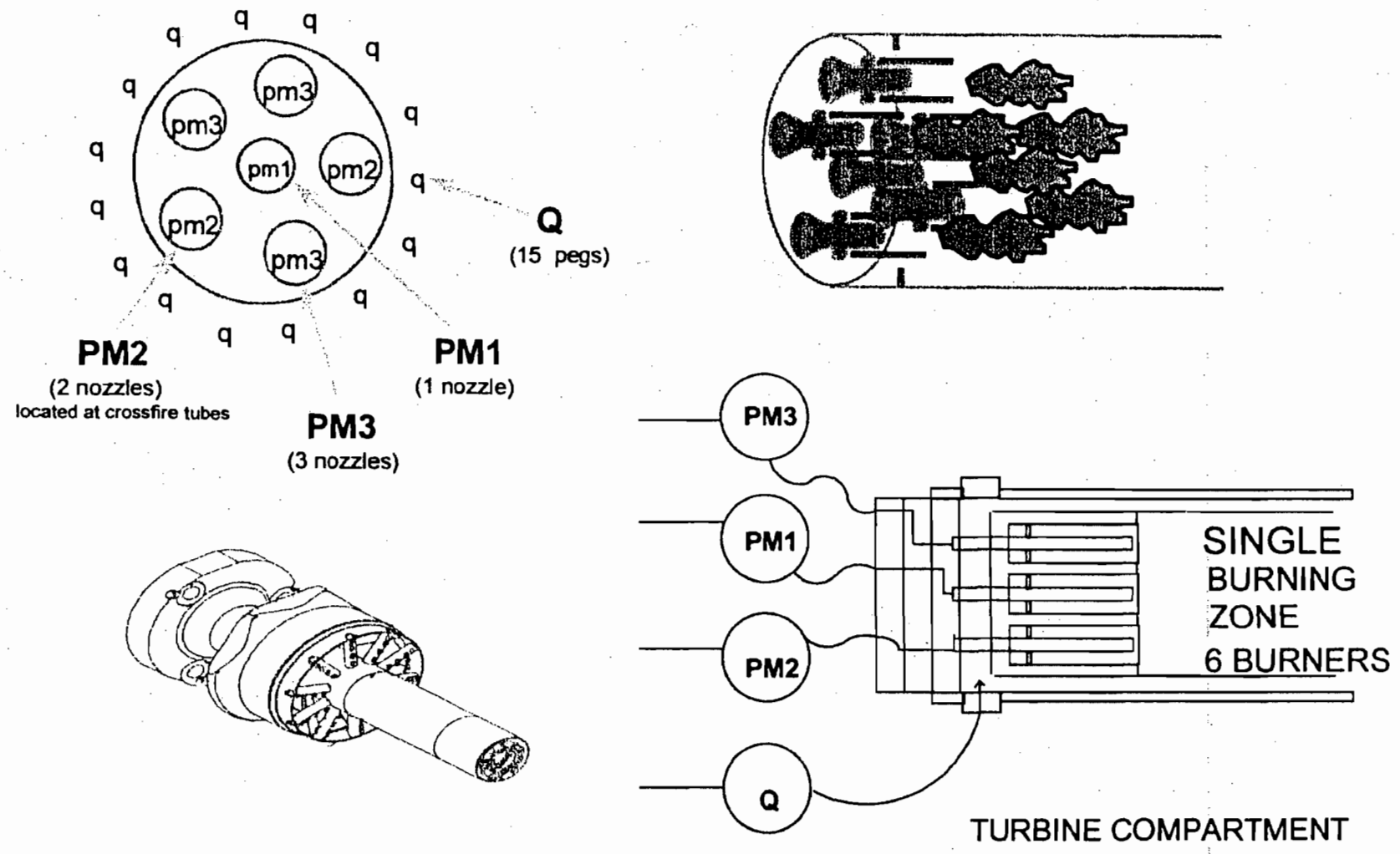


Figure 8 - GE DLN-2.6 Combustor and Nozzle Arrangement

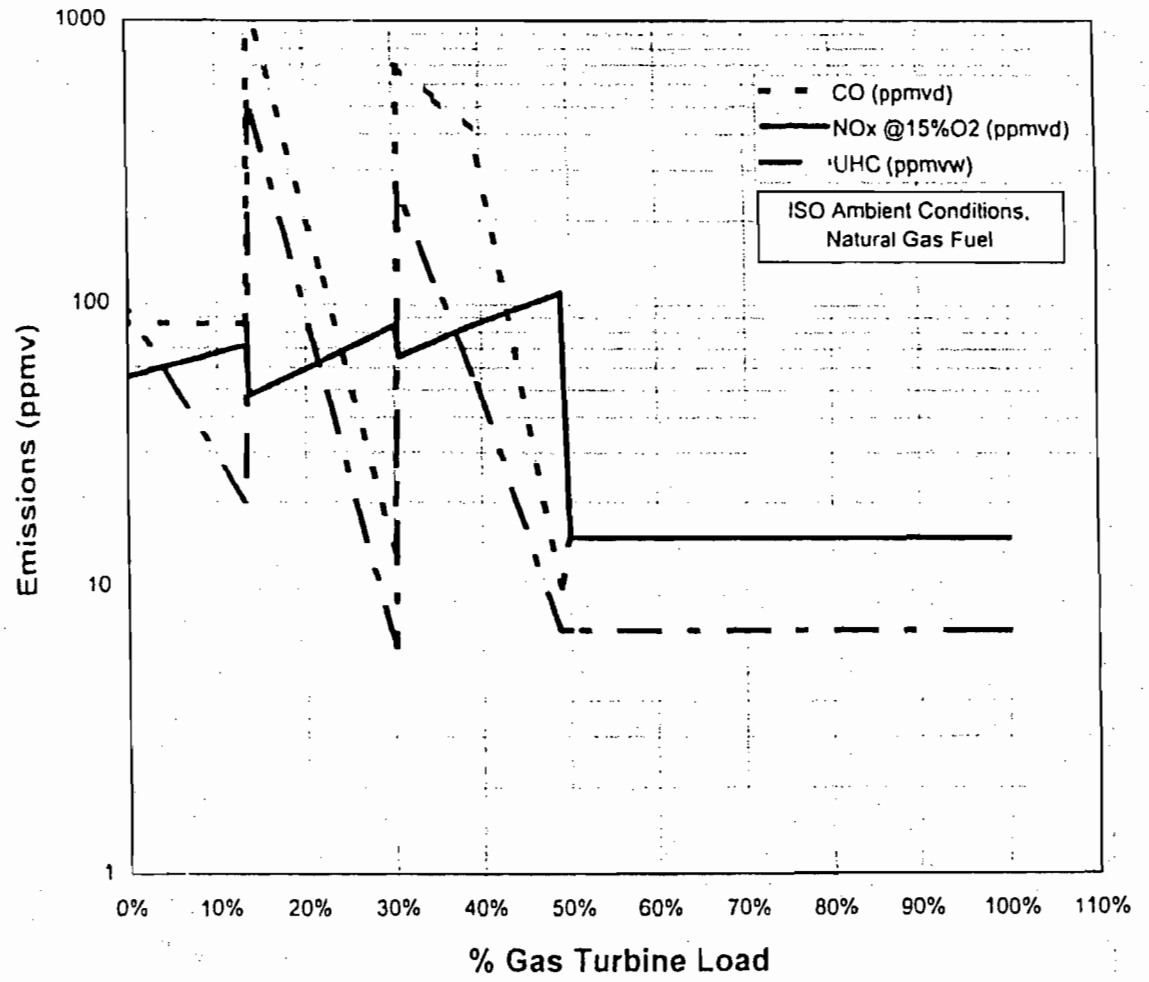


Figure 9 - Emissions Performance Curves for GE DLN-2.6 Combustor Firing Natural Gas in a Dual Fuel GE 7FA Combustion Turbine

(Simple Cycle, Intermittent Duty - If Tuned to 15 ppm NOx)

back to the steam generator. The difference between flame temperature and firing temperature into the first stage is minimized and higher efficiency is attained.

Another important result of steam cooling is that a higher firing temperature can be attained with no increase in flame temperature. Flame temperatures and NO_X emissions can therefore be maintained at comparatively low levels even at high firing temperatures. At the same time, thermal efficiency should be greater when employing steam cooling. A similar analysis applies to steam cooling around the transition piece between the combustor and first stage nozzle.

The relationship between flame temperature, firing temperature, unit efficiency, and NO_X formation can be appreciated from Figure 10 which is from a General Electric discussion on these principles. In addition to employing pre-mixing and steam cooling, further reductions are accomplished through design optimization of the burners, testing, further evaluation, etc.

At the present time, emissions achieved by combustion controls are low as 9 ppm (and even lower) from gas turbines smaller than about 200 MW (simple cycle), such as the F class.

Selective Catalytic Combustion

Selective catalytic reduction (SCR) is an add-on NO_X control technology that is employed in the exhaust stream following the gas turbine. SCR reduces NO_X emissions by injecting ammonia into the flue gas. As of early 1992, over 100 gas turbine installations already used SCR in the United States. The only combustion turbines in Florida employing SCR are at the FPC Hines Energy Complex, where Westinghouse is unable to meet the DLN limits at the present time. Recently, FPC proposed a second construction phase incorporating SCR in two Westinghouse 501F combustion turbines. Seminole Electric recently advised the Department that it would install SCR in a previously Westinghouse 501F project, originally based on DLN. Virtually all SCR units are used in combination with wet injection or combustion controls.

Ammonia reacts with NO_X in the presence of a catalyst and excess oxygen yielding molecular nitrogen and water. The catalyst used in combined cycle, low temperature applications (conventional SCR), is usually vanadium or titanium oxide and accounts for almost all installations. For high temperature applications (Hot SCR up to 1100 °F), such as simple cycle turbines, zeolite catalysts are available but used in few applications to-date.

In the past, sulfur was found to poison the catalyst material. Sulfur-resistant catalyst materials are now available, however, and catalyst formulation improvements have proven effective in resisting performance degradation with fuel oil in Europe and Japan, where conventional SCR catalyst life in excess of 4 to 6 years has been achieved, versus 8 to 10 years with natural gas.

In a manner analogous to balancing control of NO_X from the combustor with emissions of CO and hydrocarbon, similar balancing is required when controlling NO_X by SCR. Excessive ammonia use tends to increase emissions of CO, ammonia (slip), and particulate matter (when sulfur bearing fuels are used). Permit BACT limits as low as 3.5 ppm NO_X have been specified using SCR for a combined cycle F Class project in Alabama and proposed for another F Class project in Mississippi.

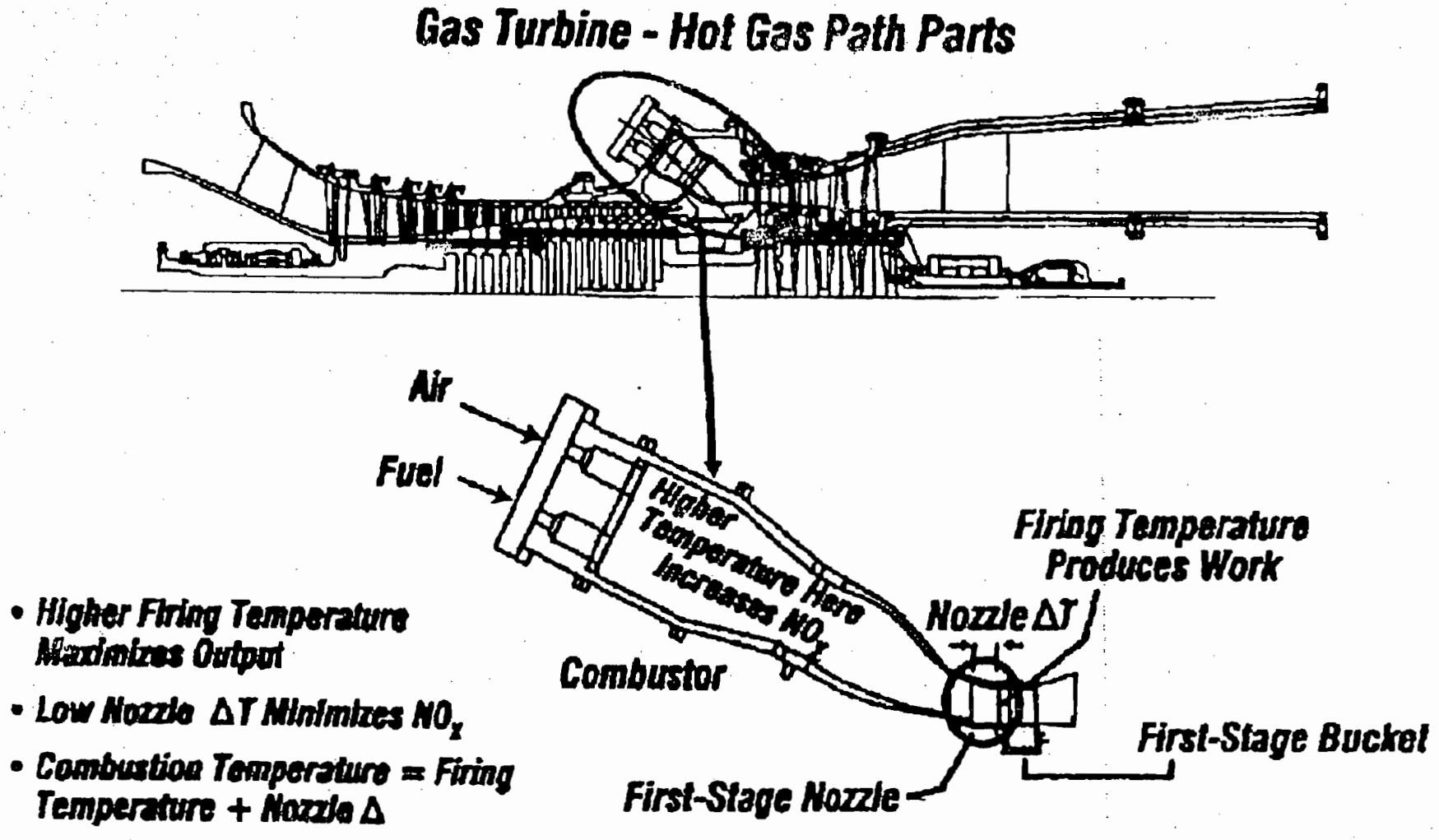


Figure 10 - Relation Between Flame Temperature and firing Temperature

6.4.3 Particulate Matter (PM/PM_{10}) Control

Particulate matter is generated by various physical and chemical processes during combustion and will be affected by the design and operation of the NO_X controls. Particulate matter emitted from this unit will mainly be less than 10 microns in diameter (PM_{10}).

Natural gas and maximum 0.05 percent sulfur No. 2 fuel oil will be the only fuels fired and are efficiently combusted in gas turbines. Clean fuels are necessary to avoid damaging turbine blades and other components already exposed to very high temperature and pressure. Natural gas is an inherently clean fuel and contains no ash. The fuel oil to be used contains minimal ash.

A technology review indicated that the top control option for PM_{10} is a combination of good combustion practices, fuel quality, and filtration of inlet air. This has been chosen as BACT by the applicant and the Department concurs. Annual emissions of PM/PM_{10} are expected to be less than 20 tons per year.

6.4.4 Carbon Monoxide (CO) Control

CO is emitted from combustion turbines due to incomplete fuel combustion. Combustion design and catalytic oxidation are the control alternatives that are viable for the project. The most stringent control technology for CO emissions is the use of an oxidation catalyst.

Most installations using catalytic oxidation are located in the Northeast. Among them are the 272 MW Berkshire, Massachusetts facility, 240 MW Brooklyn Navalyard Facility, the 240 MW Masspower facility, the 165 MW Pittsfield Generating Plant in Massachusetts, and the 345 MW Selkirk Generating Plant in New York. Catalytic oxidation was recently installed at a cogeneration plant at Reedy Creek (Walt Disney World), Florida to avoid PSD review which would have been required due to increased operation at low load. Along with its recent proposal to install SCR on a Westinghouse 501F unit (Hardee Unit 3), Seminole Electric proposes to install an oxidation catalyst for CO control.

Most combustion turbines incorporate good combustion to minimize emissions of CO. These installations typically achieve CO emissions between 10 and 30 ppm at full load, even as they achieve relatively low NO_X emissions by SCR or dry low NO_X means. By comparison, the value of 15 ppm proposed JEA's application for gas firing appears relatively low, but consistent with the capabilities of the DLN-2.6 technology as discussed above. A CO limit of 20 ppm is proposed when burning oil. Annual emission are expected not to exceed 97 ton per year.

6.4.5 Volatile Organic Compound (VOC) Control

Volatile organic compound (VOC) emissions, like CO emissions, are formed due to incomplete combustion of fuel. There are no viable add-on control techniques as the combustion turbine itself is very efficient at destroying VOC. The applicant has proposed good combustion practices to control VOC to 1.4 ppm (gas) and 3.5 (oil). These values are as low as any BACT-based VOC limit previously set by the Department. According to GE, even lower VOC emissions were achieved during recent tests of the DLN-2.6 technology when firing natural gas.[2] Annual emissions of VOC are not expected to exceed 6 TPY.

6.5 Background on Selected Gas Turbine

JEA plans to install a nominal 170 MW General Electric MS7241FA combustion turbine to be operated in a simple cycle mode.

The first commercial GE 7F Class unit was a installed at the Virginia Power Chesterfield Station in 1990.[2] The initial units had a firing temperature of 2300°F and a combined cycle efficiency exceeding 50 percent. By the mid-90s, the line was improved by higher combustor pressure, a firing temperature of 2400°F, and a combined cycle efficiency of approximately 56 percent based on a 167 MW combustion turbine. The line was redesignated as the 7FA Class.

The first GE 7F/FA project in Florida was at the FPL Martin Plant in 1993 and entered commercial service in 1994.[3] The units were equipped with DLN-2 combustors with a permitted NO_X limit of 25 ppm These actually achieve less 25 ppm of NO_X and 15 ppm of CO. The City of Tallahassee recently received approval to install a GE 7FA Class unit at its Purdom Plant.[4] Although permitted emissions are 12 ppm of NO_X, the City obtained a performance guarantee from GE of 9 ppm.[5]

General Electric, other manufacturers, and their customers are relying on further advancement and refinement of DLN technology to provide sufficient NO_X control for their combined cycle turbines in Florida. Where required by BACT determinations of certain states, General Electric incorporates SCR in combined cycle projects.[6]

The approach of progressively refining such technology is a proven one, even on some relatively large units. Basically this was the strategy adopted in Florida throughout the 1990's. Recently GE Frame 7 FA units met performance guarantees of 9 ppm with DLN-2.6 burners at Fort St. Vrain, CO and Clark County, WA.[7] GE has already achieved emissions of approximately 6 ppm on gas at a dual-fuel MW 7EA (120 MW combined cycle) unit at Cane Island Power Park in Kissimmee, FL.[8] The Cane Island unit is equipped with DLN-2 combustors. According to GE, similar performance is expected soon on the 7FA line and performance guarantees less than 9 ppm can be expected using the DLN-2.6 combustors for units delivered in a couple of years.[9]

6.6 Control Technology Determination

Following are the emission limits determined for the JEA project assuming full load. *Values for NO_X are corrected to 15% O_2 on a dry basis.* These limits or their equivalents in terms of pounds per hour, are given in the permit Specific Conditions.

NO_X	SO_2	CO	VOC	PM/Visibility (% Opacity)	Technology and Comments
15 ppm (NG) 42 ppm (FO)	<2gr S/100scf of gas 0.05% S in FO	15 ppm (NG) 20 ppm (FO)	1.4 ppm (NG) 3.5 ppm (FO)	10	Dry Low NO_X Combustors Wet Injection Pipeline Natural Gas Good Combustion Fuel Oil, 0.05% Sulfur

6.7 Rationale for Control Technology Determination

- JEA obtained a guarantee from GE for DLN-2.6 combustors which have been demonstrated to meet all of the above limits on "7FA" Class gas turbines.
- The JEA project "nets out" of PSD review and BACT.
- All of the combustion turbine emission limits comply with the NSPS and are close or equal to recent Department BACT determinations applicable to new units at start-up.
- PM_{10} emissions will be very low and difficult to measure. Therefore, the Department, with JEA's concurrence, will set a visible emission standard of 10 percent opacity.
- The Department will set CO limits achievable by good combustion equal to 15 ppm on gas and 20 ppm on oil. CO limits for the FPL Fort Myers Repowering Project and the Santa Rosa Energy Center are 12 ppm on gas. Similar limits have been proposed in recently issued Intents for Kissimmee Utilities Cane Island Unit 3 and the Duke Energy New Smyrna Beach Power Project.
- VOC emissions of 1.4 ppm (gas) and 3.5 (oil) proposed by JEA are at the lower end of values determined as BACT. Good Combustion is sufficient to achieve these low levels with the DLN-2.6 combustors while firing natural gas.
- SO_2 and $H_2SO_{4\,Acid\,Mist}$ emissions compliance will be implemented through the Custom Fuel Monitioring Schedule for each allowed fuel.

6.8 Compliance Procedures

Pollutant	Compliance Procedure
Visible Emissions	Method 9
Volatile Organic Compounds	Method 18, 25, or 25A (initial tests only)
Carbon Monoxide	Annual Method 10 (can use RATA if at capacity)
NO_X (24-hr average)	NO_X CEMS, O_2 or CO_2 diluent monitor, and flow device as needed
NO_X (NSPS initial performance)	Method 20 (can use RATA if at capacity)

7. SOURCE IMPACT ANALYSIS

An air quality analysis was not required because the modification is not subject to PSD review.

8. CONCLUSION

Based on the foregoing technical evaluation of the application and other available information, the Department has made a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations.

A. A. Linero, P.E.
Teresa Heron, Review Engineer

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6 City of Tallahassee. PSD/Site Certification Application. April, 1997.

7 State of Alabama. PSD Permit, Alabama Power/Barry (GE 7FA).

8 Telecon. Schorr, M., GE, and Costello, M., Florida DEP. March 31, 1998. Status of DLN-2.6 Program.

9 Florida DEP. Bureau of Air Regulation Monthly Report. June, 1998.

10 Telecon. Schorr, M., GE, and Linero, A. A., Florida DEP. August, 1998. Cost effectiveness of DLN versus SCR.

Attachment J

Procedures for Startup and Shutdown

Procedures for Startup and Shutdown

Procedures for startup and shutdown will be completed in accordance with manufacturers' operating procedures and/or plant operating procedures.

Attachment K

Operation and Maintenance Plan

Operation and Maintenance Plan

The facility combustion turbines will be operated and maintained in accordance with manufacturer's recommendations, operations and maintenance experience, and technical guidance taking into account protection of equipment, safety of personnel and other factors as deemed necessary to maintain compliance with the permitted limits.

Attachment L

Compliance Demonstration Reports/Records

Ambient Air Services, Inc.

106 Ambient Airway • Starke, FL 32091 • (904) 964-8440 • Fax (904) 964-6675

March 03, 2003

Mr. Joseph W. Werner, P.E.
JEA
4377 Heckscher Dr.
Jacksonville, FL. 32226

SUBJECT: Visible Emissions Tests
Kennedy Generating Station
Combustion Turbines 3, 4, 5

Dear Mr. Werner:

Included with this letter are the visible emissions tests for the three combustion turbines tested on January 24, 2003. A copy of the Field Data Test Sheet, the Visible Emissions Test Data sheets, the Process Weight Certifications, and a copy of the Observer's Certification should be sent to the City's Air and Water Quality Division within 45 days of the test date of January 24, 2003. It should be sent to:

Mr. Wayne L. Walker
Environmental Specialist
Air and Water Quality Division
City of Jacksonville
117 West Duval Street, Suite 225
Jacksonville, Florida 32202

If you have any questions, please contact me at your convenience at (904) 964-8440.

Sincerely,

George H Hawkins
Senior Technician

VISIBLE EMISSIONS TEST DATA

FACILITY:	Jacksonville Electric Authority.
FACILITY ADDRESS:	4215 Talleyrand Ave. Jacksonville, Florida 32206
MAILING ADDRESS:	21 West Church Street Jacksonville, FL 32202-3139
SOURCE IDENTIFICATION:	Combustion Turbines Nos. 3, 4, 5
COMPANY CONTACT:	Joseph Werner, P.E.
TEST CONDUCTED BY:	George H Hawkins
TEST DATE AND TIME:	January 24, 2003 Turbine No. 3: 1131 - 1231 Hrs Turbine No. 4: 1131 – 1231 Hrs Turbine No. 5: 0915 – 1015 Hrs

COMMENTS: Standard tests, no exceptions.

02/21/03

Mr. Joseph L. Cocksey, President
Ambient Air Services Services, Inc.
106 Ambient Air Way
Starke, FL 32091

Dear Sir:

#2FO environmental VE/EPA9 testing was conducted on JEA J.D. Kennedy Generating Station Combustion Turbine #3 (KCT3) on 1/24/03.

The unit operational data for this test is as follows:

		EPA9/VE
MWe(secc)		71.55
Comp In DEGF		37.60
H2O gpm		0.00
#2FO gpm		103.00
BTU/# - HHV		19502
Specific Gravity		0.8546
#/gal		7.1171
BTU/gal - HHV		138798
MMBTU/hr		8.578E+08
		AVERAGE
Start	EST	1/24/03 11:11 AM
Finish	EST	1/24/03 12:31 PM

To the best of my knowlege, this information is true and accurate.

Sincerely,

Joseph W. Werner

Joseph W. Werner, PE

JEA Laboratory Services 4377 Heckscher Drive Jacksonville, FL 32226
(904) 665-6724 FAX: (904) 665-6721

Fuel Oil Report

Lab ID: F030124K1FO2XX0
Sample Number: 03-0089
Sample Date: 01/24/2003
Sample Time: 1100

Station/Unit: Kennedy 1
Sample Type: Fuel Oil 2
Sample Desc: TK3 -#2FO
Report Date: 01/27/2003

Test	Value	Units
BTU/lb	19502	BTU/lb
Water by KF	0.0012	%
S (X-Ray)	0.0352	%
Specific Gravity	.8546	

Report Comments:

Submitted by: C.Jackson

JEA KCT3
2003 VE/EPA9
1/24/03

JEA J D Kennedy Generating Station
Combustion Turbine #3 (JEA KCT3)
Bi-Annual EPA9 Environmental Testing
#2FO 1/24/03

RUN #	1	w/o logger
MWe(socc)	71.05	
Comp In DEGF	37.60	
H2O gpm	0.00	
#2FO gpm	103.00	
BTU/# - HHV	19502	
Specific Gravity	0.8548	
#gal	7.1171	(K = 8.328)
BTU/gal - HHV	138798	
MMBTU/hr	8.578E-01	

AVERAGE

Start	EST	1/24/03 11:31 AM
Finish	EST	1/24/03 12:31 PM

ps.kct3.#2 Oil BTUs	#2 Oil BTUs	btu/gal	139102
ps.kct3.#2 Oil Cost	#2 Oil Cost	$/MMBTU	5.307099762
PS.kct3.Aborts Counter	Aborts Counter		3
PS.kct3.Accel/Decel Rate	Accel/Decel Rate	RPM	0
PS.kct3.Alarms #1 through #	Alarms #1 through #16		No Good Data For This Time -11059
PS.kct3.Alarms #113 throug	Alarms #113 through #128		No Good Data For This Time -11059
PS.kct3.Alarms #129 throug	Alarms #129 through #144		No Good Data For This Time -11059
PS.kct3.Alarms #145 throug	Alarms #145 through #160		No Good Data For This Time -11059
PS.kct3.Alarms #161 through	Alarms #161 through #176		No Good Data For This Time -11059
PS.kct3.Alarms #17 through	Alarms #17 through #32		No Good Data For This Time -11059
PS.kct3.Alarms #177 throug	Alarms #177 through #192		No Good Data For This Time -11059
PS.kct3.Alarms #193 throug	Alarms #193 through #208		No Good Data For This Time -11059
PS.kct3.Alarms #209 throug	Alarms #209 through #224		No Good Data For This Time -11059
PS.kct3.Alarms #225 throug	Alarms #225 through #240		No Good Data For This Time -11059
PS.kct3.Alarms #241 throug	Alarms #241 through #256		No Good Data For This Time -11059
PS.kct3.Alarms #257 throug	Alarms #257 through #272		No Good Data For This Time -11059
PS.kct3.Alarms #33 through	Alarms #33 through #48		No Good Data For This Time -11059
PS.kct3.Alarms #49 through	Alarms #49 through #64		No Good Data For This Time -11059
PS.kct3.Alarms #65 through	Alarms #65 through #80		No Good Data For This Time -11059
PS.kct3.Alarms #81 through	Alarms #81 through #96		No Good Data For This Time -11059
PS.kct3.Alarms #97 through	Alarms #97 through #112		No Good Data For This Time -11059
PS.kct3.Anti-Surge Limiter C	Anti-Surge Limiter Control	%	97.63230232
PS.kct3.Atomizing Air Pres	Atomizing Air Pressure	PSIG	132
PS.kct3.Atomizing Air Tank	Atomizing Air Tank Pressur	PSIG	196.2420862
PS.kct3.Auto Voltage Regln	Auto Voltage Regulator Pos	%	25.17319489
PS.kct3.Average Blade Path	Average Blade Path Temperat	DegF	847.4078369
PS.kct3.Average Cold Junct	Average Cold Junction Comp	DegF	86.42206299
PS.kct3.Average Exhaust Te	Average Exhaust Gas Temper	DegF	799.4190826
PS.kct3.Base Load Hours Ti	Base Load Hours Timer	Hours	53.42027664

PS:kct3:Bearing #4 Comp Jc Bearing #4 Comp Journal Ba	DegF	190.8950626
PS:kct3:Bearing #5 Babbit 1 Bearing #5 Babbitt Tempera	DegF	182.3761321
PS:kct3:Bearing Lube Oil Pr Bearing Lube Oil Pressure	PSIG	16.51986122
PS:kct3:Bearing Oil Supply Bearing Oil Supply Tempera	DegF	113.0423594
PS:kct3:Blade Path Temper Blade Path Temperature #1	DegF	825.1363525
PS:kct3:Blade Path Temper Blade Path Temperature #10	DegF	841.1517334
PS:kct3:Blade Path Temper Blade Path Temperature #11	DegF	776.3547974
PS:kct3:Blade Path Temper Blade Path Temperature #12	DegF	788.2038133
PS:kct3:Blade Path Temper Blade Path Temperature #13	DegF	765.7000122
PS:kct3:Blade Path Temper Blade Path Temperature #14	DegF	821.0220947
PS:kct3:Blade Path Temper Blade Path Temperature #15	DegF	839.3560791
PS:kct3:Blade Path Temper Blade Path Temperature #16	DegF	840.1689829
PS:kct3:Blade Path Temper Blade Path Temperature #2	DegF	844.925293
PS:kct3:Blade Path Temper Blade Path Temperature #3	DegF	831.6554565
PS:kct3:Blade Path Temper Blade Path Temperature #4	DegF	794.90448
PS:kct3:Blade Path Temper Blade Path Temperature #5	DegF	844.1107178
PS:kct3:Blade Path Temper Blade Path Temperature #6	DegF	815.4251099
PS:kct3:Blade Path Temper Blade Path Temperature #7	DegF	841.2766113
PS:kct3:Blade Path Temper Blade Path Temperature #8	DegF	817.3450928
PS:kct3:Blade Path Temper Blade Path Temperature #9	DegF	791.2633057
PS:kct3:Blade Path Temper Blade Path Temperature Con	%	85.1515274
PS:kct3:Blade Path Temper Blade Path Temperature Con	DegF	849.6919556
PS:kct3:Bus Frequency Bus Frequency	Hz	59.48305511
PS:kct3:Bus Phase #1 Volta Bus Phase #1 Voltage	KV	13.76868371
PS:kct3:Bus Phase #2 Volta Bus Phase #2 Voltage	KV	13.76868371
PS:kct3:Bus Phase #3 Volta Bus Phase #3 Voltage	KV	13.76868371
PS:kct3:Bypass Valve Positi Bypass Valve Position	%	No Good Data For This Time -11059
PS:kct3:Calculated Power F Calculated Power Factor		98.64691925
PS:kct3:Combustor Shell Pr Combustor Shell Pressure (	PSIG	146.9400024
PS:kct3:Compressor Discha Compressor Discharge Tempe	DegF	605.7128906
PS:kct3:Compressor Inlet Le Compressor Inlet Left Temp	DegF	39.25624847
PS:kct3:Compressor Inlet Ri Compressor Inlet Right Tem	DegF	35.93777847
ps:kct3:Compressor Seismic Compressor Seismic Vibrati	mils	0.756168306
PS:kct3:Control LSS Output Control LSS Output	%	80.30541992
PS:kct3:Cooldown Time Rer Cooldown Time Remaining	sec	0
PS:kct3:Cooldown Time Set Cooldown Time Setpoint	sec	120
PS:kct3:Cooling Adjust Setp Water Injection Cooling Ad	%	0
PS:kct3:Cooling Air Temper Cooling Air Temperature	DegF	347.2367554
ps:kct3:Cost Per Net MWH Cost Per Net MWH	$/MWH	No Good Data For This Time -11059
ps:kct3:Cost Per Net MWH - Cost Per Net MWH - Smoothe	$/MWH	No Good Data For This Time -11059
ps:kct3:Dev from Exp Cost p Dev from Exp Cost per Net	$/MWH	No Good Data For This Time -11059
PS:kct3:Disc Cavity #2-1 Te Disc Cavity #2-1 Temperatu	DegF	584.2827759
PS:kct3:Disc Cavity #2-2 Te Disc Cavity #2-2 Temperatu	DegF	641.75
PS:kct3:Disc Cavity #3-1 Te Disc Cavity #3-1 Temperatu	DegF	640.3012695
PS:kct3:Disc Cavity #3-2 Te Disc Cavity #3-2 Temperatu	DegF	636.9851685
PS:kct3:Disc Cavity #4-1 Te Disc Cavity #4-1 Temperatu	DegF	623.4282837
PS:kct3:Disc Cavity #4-2 Te Disc Cavity #4-2 Temperatu	DegF	604.5215454
PS:kct3:Disc Cavity #5 Tem Disc Cavity #5 Temperature	DegF	53.97692817
PS:kct3:Disc Cavity #6 Tem Disc Cavity #6 Temperature	DegF	507.7977905
ps:kct3:Disp Coeff A Disp Coeff A	Constant	290.2279068

ps.kct3.Disp Coeff AA	Disp Coeff AA	Constant	-0.250176013
ps.kct3.Disp Coeff B	Disp Coeff B	Constant	8.755000114
ps.kct3.Disp Coeff BB	Disp Coeff BB	Constant	0.999994025
ps.kct3.Disp Coeff C	Disp Coeff C	Constant	0.00338804
ps.kct3.Disp Coeff CC	Disp Coeff CC	Constant	2.751822E-07
ps.kct3.Disp Coeff D	Disp Coeff D	Constant	0.000289768
PS.kct3.Dry Bulb Temperatu	Dry Bulb Temperature	DegF	32.54101563
PS.kct3.Electrical Shut Tem	Electrical Shut Temperatur	DegF	53.91511059
PS.kct3.Emergency Starts C	Emergency Starts Counter		46.22972107
PS.kct3.Excitation Field Cur	Excitation Field Current	Amps	0
PS.kct3.Excitation Field Vol	Excitation Field Voltage	Volts	0
PS.kct3.Exciter Bearing Drai	Exciter Bearing Drain Temp	DegF	113.832222
PS.kct3.Exciter Cold Air Inle	Exciter Cold Air Inlet Tem	DegF	45.52527618
ps.kct3.Exciter Seismic Vibr	Exciter Seismic Vibration	mils	0.901299911
ps.kct3.Exciter Vibration (slo	Exciter Vibration (slot 3	mils	2.97204781
PS.kct3.Exciter Warm Air Di	Exciter Warm Air Discharge	DegF	63.97514191
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	796.5303711
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	798.5923096
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	803.1733398
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	804.0219116
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	801.4708862
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	800.1283569
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	799.0258789
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	791.3377686
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #2	DegF	847.8867798
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #3	DegF	804.0101929
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #4	DegF	803.638855
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #5	DegF	797.4967651
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #6	DegF	795.4472046
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #7	DegF	798.8146362
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #8	DegF	798.7091064
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature #9	DegF	798.8426514
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature Co	%	80.30347443
PS.kct3.Exhaust Gas Tempe	Exhaust Gas Temperature Co	DegF	799.6780396
ps.kct3.Exp Cost Per Net MW	Exp Cost Per Net MWH	$/MWH	No Good Data For This Time -11059
ps.kct3.Exp Gas Net MW	Exp Gas Net MW	MW	71.54050293
ps.kct3.Exp Heat Input	Exp Heat Input	MMBTU/HR	No Good Data For This Time -11059
ps.kct3.Exp Net Heat Rate	Exp Net Heat Rate	BTU/KWH	No Good Data For This Time -11059
ps.kct3.Exp Total Fuel Cost	Exp Total Fuel Cost per Ho	$/HR	No Good Data For This Time -11059
PS.kct3.Fuel Control Deman	Fuel Control Demand (PSS O	%	80.30347443
ps.kct3.Fuel Cost % Deviati	Fuel Cost % Deviation from	%/100	No Good Data For This Time -11059
ps.kct3.Fuel Cost Deviation	Fuel Cost Deviation from E	$/HR	No Good Data For This Time -11059
ps.kct3.Fuel Flow On-line	Fuel Flow While On-line	GPM	103.0000
PS.kct3.Fuel Flow Signal	Fuel Flow Signal	GPM	103
PS.kct3.Fuel Nozzle Pressu	Fuel Nozzle Pressure	PSIG	795.6033325
PS.kct3.Fuel Oil Flow Divide	Fuel Oil Flow Divider Inle	DegF	52.48611069
PS.kct3.Fuel Pump Bypass	Fuel Pump Bypass Valve Con	%	51.89972153
PS.kct3.Fuel Pump Discharg	Fuel Pump Discharge Pressu	PSIG	939.4656372
PS.kct3.Fuel Pump Discharg	Fuel Pump Discharge Pressu	PSIG	940
PS.kct3.Gen Phase #1 Curr	Gen Phase #1 Current	Amps	2954.253174

JEA KCT3
2003 VE/EPA9
1/24/03

PS kct3 Gen Phase #1 Volts Gen Phase #1 Voltage	KV	13.76888371
PS kct3 Gen Phase #2 Curre Gen Phase #2 Current	Amps	2878.825684
PS kct3 Gen Phase #2 Volta Gen Phase #2 Voltage	KV	13.76888371
PS kct3 Gen Phase #3 Curre Gen Phase #3 Current	Amps	2912.225586
PS kct3 Gen Phase #3 Volts Gen Phase #3 Voltage	KV	13.76888371
PS kct3 Generator Inboard E Generator Inboard Bearing	DegF	149.0858307
PS kct3 Generator Inlet Air T Generator Inlet Air Temper	DegF	128.6466675
PS kct3 Generator Outboard Generator Outboard Bearing	DegF	169.8366326
PS kct3 Generator Outlet Air Generator Outlet Air Temper	DegF	97.4715271
PS kct3 Generator Stator Te Generator Stator Temperatu	DegF	115.0566635
PS kct3 Generator Stator Te Generator Stator Temperatu	DegF	117.8162537
PS kct3 Generator Stator Te Generator Stator Temperatu	DegF	106.098053
PS kct3 Generator Stator Te Generator Stator Temperatu	DegF	115.4236145
PS kct3 Generator Stator Te Generator Stator Temperatu	DegF	114.0811081
PS kct3 Generator Stator Te Generator Stator Temperatu	DegF	108.1029129
ps kct3 Gross MW On-line Gross MW While On-line	MW	71.87923431
ps kct3 Heat Rate % Deviati Heat Rate % Deviation	%/100	No Good Data For This Time -11059
ps kct3 Heat Rate Deviation Heat Rate Deviation	BTU/KWH	No Good Data For This Time -11057
ps kct3 Horizontal Compress Horizontal Compressor Vibr	mils	3.055761576
ps kct3 Horizontal Turbine V Horizontal Turbine Vibrati	mils	3.231481791
ps kct3 House Load House Load	MW	No Good Data For This Time -11057

Ambient Air Services, Inc.
106 Ambient Airway
Starke, Florida 32091

No. 3

FACILITY JEA Kennedy
SOURCE No. 3 Gas Turbine
ADDRESS Talleyrand
CITY Jacksonville STATE FL 32206
PHONE SOURCE ID NO
PROCESS gas turbine OPERATING MODE start
CONTROL EQUIP — OPERATING MODE —
DESCRIBE EMISSION POINT rectangular stack of three most western - by gate

HEIGHT OF EMISSION POINT	HEIGHT RELATIVE TO OBSERVER
START ~50' END 50'	START ~42' END 42'
DISTANCE TO EMISSION POINT	DIRECTION TO EMISSION PT
START ~250' END 250'	START ~270° END 270°

VERTICAL ANGLE TO EMISSION PT
START 5° END 5°

DESCRIBE EMISSIONS
START exhaust END exhaust

EMISSION COLOR
START black END black

WATER DROPLET PLUME YES (NO)
ATTACHED DETACHED

DESCRIBE PLUME BACKGROUND
START sky END sky

BACKGROUND COLOR
START blue END blue

SKY CONDITION
START clear END clear

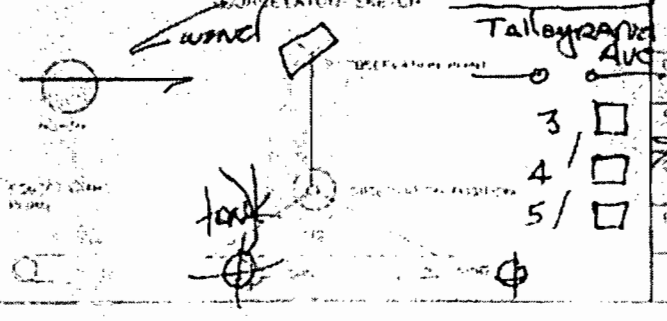
WIND SPEED
START 36 END 36

WIND DIRECTION
START 31 END 58

AMBIENT TEMPERATURE	WET BULB TEMP	%RH
START 36 END 36	31	58

COMMENTS 3+4 Read simultaneous

CORRELATION ERROR



PAGE 1 OF 1
START TIME 1131 END TIME 1231
OBSERVATION DATE 01/24/03 TIME ZONE Eastern

SECS	0	15	30	45	SECS	0	15	30	45
1	15	15	20	20	31	15	15	15	20
2	15	15	15	15	32	15	15	15	15
3	20	20	15	15	33	10	15	10	15
4	15	15	10	10	34	15	15	10	10
5	10	10	15	15	35	10	10	10	10
6	20	20	15	15	36	10	10	10	10
7	10	10	10	10	37	10	15	10	10
8	10	10	10	15	38	15	10	10	10
9	15	15	20	20	39	15	15	20	20
10	20	20	25	20	40	15	10	10	10
11	15	15	10	10	41	20	20	25	25
12	10	10	15	15	42	25	15	15	15
13	10	10	15	10	43	20	15	10	20
14	10	10	10	10	44	10	20	10	20
15	15	15	15	15	45	15	15	15	10
16	20	20	20	15	46	10	10	10	10
17	10	10	10	10	47	15	15	10	10
18	10	10	15	15	48	10	10	10	10
19	20	20	15	15	49	10	10	15	15
20	10	10	10	10	50	15	15	15	15
21	10	10	10	10	51	15	15	10	10
22	10	10	10	10	52	10	10	10	10
23	10	10	10	10	53	10	10	10	10
24	10	10	10	10	54	10	15	15	10
25	20	10	20	20	55	10	10	10	10
26	20	10	10	10	56	15	15	15	20
27	20	20	20	10	57	15	20	15	15
28	10	15	15	10	58	15	10	10	20
29	10	10	10	10	59	10	10	15	15
30	10	10	15	15	60	15	15	10	10

AVERAGE OPACITY FOR HIGHEST PERIOD 19 (18.95)

OBSERVER'S NAME (PRINT) George H Hawkins

SIGNATURE George H Hawkins DATE 01/24/03

ORGANIZATION AMBIENT AIR SERVICES, INC. (AASI)

CERTIFIED BY Eastern Technical Assoc. DATE 12/05/02

IBLE EMISSIONS EVALUATOR

This is to certify that

George Hawkins

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

302725	Jacksonville, Florida	December 4, 2002
Certificate Number	Location	Date of Issue

President

Director of Training

Ambient Air Services, Inc.

106 Ambient Airway • Starke, FL 32091 • (904) 964-8440 • Fax (904) 964-6675

March 03, 2003

Mr. Joseph W. Werner, P.E.
JEA
4377 Heckscher Dr.
Jacksonville, FL 32226

SUBJECT: Visible Emissions Tests
Kennedy Generating Station
Combustion Turbines 3, 4, 5

Dear Mr. Werner:

Included with this letter are the visible emissions tests for the three combustion turbines tested on January 24, 2003. A copy of the Field Data Test Sheet, the Visible Emissions Test Data sheets, the Process Weight Certifications, and a copy of the Observer's Certification should be sent to the City's Air and Water Quality Division within 45 days of the test date of January 24, 2003. It should be sent to:

Mr. Wayne L. Walker
Environmental Specialist
Air and Water Quality Division
City of Jacksonville
117 West Duval Street, Suite 225
Jacksonville, Florida 32202

If you have any questions, please contact me at your convenience at (904) 964-8440.

Sincerely,

George H Hawkins
Senior Technician

VISIBLE EMISSIONS
TEST DATA

FACILITY:	Jacksonville Electric Authority.
FACILITY ADDRESS:	4215 Talleyrand Ave. Jacksonville, Florida 32206
MAILING ADDRESS:	21 West Church Street Jacksonville, FL 32202-3139
SOURCE IDENTIFICATION:	Combustion Turbines Nos. 3, 4, 5
COMPANY CONTACT:	Joseph Werner, P.E.
TEST CONDUCTED BY:	George H Hawkins
TEST DATE AND TIME:	January 24, 2003 Turbine No. 3: 1131 - 1231 Hrs Turbine No. 4: 1131 – 1231 Hrs Turbine No. 5: 0915 – 1015 Hrs

COMMENTS: Standard tests, no exceptions.

Ambient Air Services, Inc.
106 Ambient Airway
Starke, Florida 32091 No. 4

PAGE 1 OF

START TIME 0 1131 END TIME 1231

OBSERVATION DATE 01/24/03 TIME ZONE Eastern

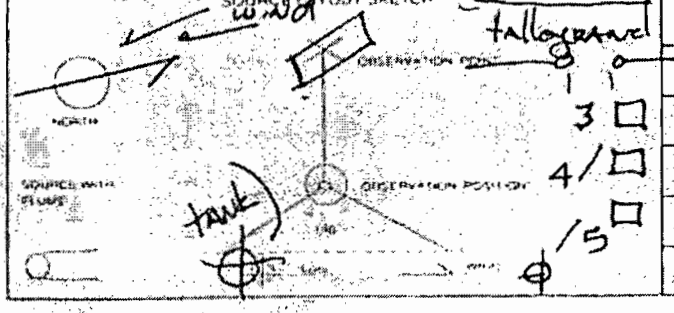
FACILITY JEA Kennedy
SOURCE No. 4 Turbine
ADDRESS Talleyrand Ave
CITY Jacksonville STATE FL 32206
PHONE SOURCE ID NO
PROCESS gas turbine OPERATING see chart
CONTROL EQUIP — OPERATING MODE —
DESCRIBE EMISSION POINT of three turbine by gate - middle one

HEIGHT OF EMISSION POINT START ~50' END 50
HEIGHT RELATIVE TO OBSERVER START ~42' END 42'
DISTANCE TO EMISSIONS POINT START ~150' END 150'
DIRECTION TO EM PT START 284 END 284
VERTICAL ANGLE TO OBS PT START 7° END 7°

DESCRIBE EMISSIONS START exhaust from END same
EMISSION COLOR START black END black
WATER DROPLET PLUME YES (NO) ATTACHED DETACHED
DESCRIBE PLUME BACKGROUND START sky END sky
BACKGROUND COLOR START blue END blue
SKY CONDITION START clear END clear
WIND SPEED START 2-8 END 2-6
WIND DIRECTION START N END N
AMBIENT TEMPERATURE START 36 END 36
WET BULB TEMP 31
%RH 58

COMMENTS rectangular stack
Nos 3&4 react simultaneously

SOURCE/FOOT SKETCH



SECOND	0	15	30	45	SECOND	0	15	30	45
1	10	10	10	10	31	10	5	5	5
2	10	10	10	10	32	10	10	10	10
3	5	5	5	5	33	10	10	10	10
4	10	15	10	10	34	5	5	10	10
5	10	10	10	10	35	15	10	15	10
6	10	10	10	10	36	10	10	5	5
7	10	10	10	10	37	5	5	5	5
8	10	10	10	10	38	10	10	5	5
9	10	10	10	10	39	5	10	5	5
10	10	10	10	10	40	5	5	10	5
11	5	5	5	5	41	5	5	10	5
12	5	5	5	5	42	5	10	5	5
13	5	10	10	10	43	10	5	5	5
14	5	5	5	5	44	10	5	5	5
15	5	5	5	5	45	10	5	10	5
16	5	5	5	5	46	10	10	10	10
17	5	5	5	5	47	10	15	10	10
18	10	10	10	10	48	10	10	15	10
19	5	10	10	10	49	10	15	10	15
20	10	5	10	10	50	10	10	15	15
21	10	10	5	10	51	10	10	10	10
22	10	10	10	5	52	5	10	10	5
23	10	10	5	10	53	5	5	10	10
24	10	5	10	10	54	10	10	10	10
25	5	10	10	10	55	10	10	15	10
26	10	10	10	10	56	10	10	10	10
27	10	10	10	10	57	10	10	10	10
28	10	10	10	10	58	10	10	10	10
29	15	15	15	10	59	5	10	15	10
30	10	10	10	10	60	10	5	5	5

AVERAGE OPACITY FOR HIGHEST PERIOD 11

OBSERVER'S NAME (PRINT) George H. Hawkins
SIGNATURE George H. Hawkins DATE 01/24/03
ORGANIZATION AMBIENT AIR SERVICES, INC. (AASI)
CERTIFIED BY Eastern Technical Assoc DATE 12/05/02

Revision 1 12/07/2002

AASI Form 45

JAX55

6/5/2003

302725

IBLE EMISSIONS EVALUATOR

This is to certify that

George Hawkins

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

302725	*Jacksonville, Florida*	*December 4, 2002*
Certificate Number	Location	Date of Issue

President	Director of Training

02/21/03

JEA

Mr. Joseph L. Cooksey, President
Ambient Air Services Services, Inc.
106 Ambient Air Way
Starke, FL 32091

Dear Sir,

#2FO environmental VE/EPA9 testing was conducted on JEA J.D. Kennedy Generating Station Combustion Turbine #4 (KCT4) on 1/24/03.

The unit operational data for this test is as follows:

	EPA9/VE
MWe(sscc)	71.63
Comb In DEGF	38.99
H2O gpm	0.00
#2FO gpm	105.10
BTU/# - HHV	19502
Specific Gravity	0.8546
#/gal	7.1171
BTU/gal - HHV	138798
MMBTU/hr	8.753E+08

AVERAGE

Start	EST	1/24/03 11:31 AM
Finish	EST	1/24/03 12:31 PM

To the best of my knowlege, this information is true and accurate

Sincerely,

Joseph W. Werner

Joseph W. Werner, PE

JEA Laboratory
Services4377 Heckscher Drive Jacksonville, FL 32226
(904) 665-6724 FAX: (904) 665-6721

Fuel Oil Report

Lab ID: F030124K1FO2XX0
Sample Number: 03-0089
Sample Date: 01/24/2003
Sample Time: 1100

Station/Unit: Kennedy 1
Sample Type: Fuel Oil 2
Sample Desc: TK3 -#2FO
Report Date: 01/27/2003

Result	Value	Units
BTU/lb	19502	BTU/lb
Water by KF	0.0012	%
S (X-Ray)	0.0352	%
Specific Gravity	.8546	

Report Comments

Submitted by: C.Jackson

JEA KCT4
2003 VE/EPA9
1/24/03

JEA J.D.Kennedy Generating Station
Combustion Turbine #4 (JEA KCT4)
Bi-Annual EPA9 Environmental Testing
#2FO 1/24/03

	RUN #	1	w/o logger
	MWe(sccc)	71.83	
	Comp In DEGF	58.99	
	H2O gpm	0.00	
	#2FO gpm	105.10	
	BTU/# - HHV	19502	
	Specific Gravity	0.8546	
	#/gal	7.1171	(K = 8.328)
	BTU/gal - HHV	138798	
	MMBTU/hr	8.753E+08	

AVERAGE

Start	EST	1/24/03 11:31 AM
Finish	EST	1/24/03 12:31 PM

PS:kct4:Aborts Counter	Aborts Counter		1
PS:kct4:Accel/Decel Rate	Accel/Decel Rate	RPM	-0.003615273
PS:kct4:Alarms #1 through #	Alarms #1 through #16		0
PS:kct4:Alarms #113 throug	Alarms #113 through #128		2097184
PS:kct4:Alarms #129 throug	Alarms #129 through #144		0
PS:kct4:Alarms #145 throug	Alarms #145 through #160		1073823744
PS:kct4:Alarms #161 throug	Alarms #161 through #176		24774734
PS:kct4:Alarms #17 through	Alarms #17 through #32		0
PS:kct4:Alarms #177 throug	Alarms #177 through #192		0
PS:kct4:Alarms #193 throug	Alarms #193 through #208		0
PS:kct4:Alarms #209 throug	Alarms #209 through #224		0
PS:kct4:Alarms #225 throug	Alarms #225 through #240		0
PS:kct4:Alarms #241 throug	Alarms #241 through #256		0
PS:kct4:Alarms #257 throug	Alarms #257 through #272		0
PS:kct4:Alarms #33 through	Alarms #33 through #48		0
PS:kct4:Alarms #49 through	Alarms #49 through #64		0
PS:kct4:Alarms #65 through	Alarms #65 through #80		0
PS:kct4:Alarms #81 through	Alarms #81 through #96		0
PS:kct4:Alarms #97 through	Alarms #97 through #112		0
PS:kct4:Anti-Surge Limiter C	Anti-Surge Limiter Control	%	98.39430237
PS:kct4:Atomizing Air Pres	Atomizing Air Pressure	PSIG	136
PS:kct4:Atomizing Air Tank I	Atomizing Air Tank Pressur	PSIG	126.6767426
PS:kct4:Auto Voltage Regul	Auto Voltage Regulator Pos	%	39.68805695
PS:kct4:Average Blade Path	Average Blade Path Tempera	DegF	817.3391113
PS:kct4:Average Cold Junct	Average Cold Junction Comp	DegF	99.9394455
PS:kct4:Average Exhaust Ga	Average Exhaust Gas Temper	DegF	756.8546143
PS:kct4:Base Load Hours Ti	Base Load Hours Timer	Hours	47.36388779
PS:kct4:Bearing #4 Comp Jo	Bearing #4 Comp Journal Ba	DegF	99.86805725
PS:kct4:Bearing #5 Babbitt T	Bearing #5 Babbitt Tempera	DegF	104.836525

PS kct4 Bearing Lube Oil Pr	Bearing Lube Oil Pressure	PSIG	16
PS kct4 Bearing Oil Supply	Bearing Oil Supply Tempera	DegF	114.9173584
PS kct4 Blade Path Temper	Blade Path Temperature #1	DegF	829.5998291
PS kct4 Blade Path Temper	Blade Path Temperature #10	DegF	850.3744507
PS kct4 Blade Path Temper	Blade Path Temperature #11	DegF	818.4737549
PS kct4 Blade Path Temper	Blade Path Temperature #12	DegF	829.5890503
PS kct4 Blade Path Temper	Blade Path Temperature #13	DegF	806.5198364
PS kct4 Blade Path Temper	Blade Path Temperature #14	DegF	801.3156738
PS kct4 Blade Path Temper	Blade Path Temperature #15	DegF	817.9003906
PS kct4 Blade Path Temper	Blade Path Temperature #16	DegF	835.0534668
PS kct4 Blade Path Temper	Blade Path Temperature #2	DegF	817.4773118
PS kct4 Blade Path Temper	Blade Path Temperature #3	DegF	798.4793091
PS kct4 Blade Path Temper	Blade Path Temperature #4	DegF	765.5917358
PS kct4 Blade Path Temper	Blade Path Temperature #5	DegF	814.9125366
PS kct4 Blade Path Temper	Blade Path Temperature #6	DegF	908.5991396
PS kct4 Blade Path Temper	Blade Path Temperature #7	DegF	869.1062012
PS kct4 Blade Path Temper	Blade Path Temperature #8	DegF	803.1375122
PS kct4 Blade Path Temper	Blade Path Temperature #9	DegF	831.6666701
PS kct4 Blade Path Temper	Blade Path Temperature Con	%	100
PS kct4 Blade Path Temper	Blade Path Temperature Con	DegF	848.1152954
PS kct4 Bus Frequency	Bus Frequency	Hz	59.38236237
PS kct4 Bus Phase #1 Volta	Bus Phase #1 Voltage	KV	13.76888371
PS kct4 Bus Phase #2 Volta	Bus Phase #2 Voltage	KV	13.76888371
PS kct4 Bus Phase #3 Volta	Bus Phase #3 Voltage	KV	13.76888371
PS kct4 Bypass Valve Posit	Bypass Valve Position	%	0
PS kct4 Calculated Power F	Calculated Power Factor		99.56635284
PS kct4 Combustor Shell Pr	Combustor Shell Pressure (	PSIG	148.0155487
PS kct4 Compressor Discha	Compressor Discharge Tempe	DegF	615.3518066
PS kct4 Compressor Inlet Le	Compressor Inlet Left Temp	DegF	40.75999832
PS kct4 Compressor Inlet Ri	Compressor Inlet Right Tem	DegF	37.22527695
ps kct4 Compressor Seismic	Compressor Seismic Vibrati	mils	0.522771895
PS kct4 Control LSS Output	Control LSS Output	%	98.34958649
PS kct4 Cooldown Time Rer	Cooldown Time Remaining	sec	0
PS kct4 Cooldown Time Set	Cooldown Time Setpoint	sec	120
PS kct4 Cooling Adjust Setp	Water Injection Cooling Ad	%	0
PS kct4 Cooling Air Temper	Cooling Air Temperature	DegF	348.399231
ps kct4 Cost Per Net MWH	Cost Per Net MWH	$/MWH	No Good Data For This Time -110
ps kct4 Cost Per Net MWH -	Cost Per Net MWH - Smoothe	$/MWH	No Good Data For This Time -110
ps kct4 Dev from Exp Cost p	Dev from Exp Cost per Net	$/MWH	No Good Data For This Time -110
PS kct4 Disc Cavity #2-1 Te	Disc Cavity #2-1 Temperatu	DegF	655.630249
PS kct4 Disc Cavity #2-2 Te	Disc Cavity #2-2 Temperatu	DegF	628.9452515
PS kct4 Disc Cavity #3-1 Te	Disc Cavity #3-1 Temperatu	DegF	954.0152588
PS kct4 Disc Cavity #3-2 Te	Disc Cavity #3-2 Temperatu	DegF	711.4171143
PS kct4 Disc Cavity #4-1 Te	Disc Cavity #4-1 Temperatu	DegF	597.5570068
PS kct4 Disc Cavity #4-2 Te	Disc Cavity #4-2 Temperatu	DegF	603.2311401
PS kct4 Disc Cavity #5 Temp	Disc Cavity #5 Temperature	DegF	51.74402618
PS kct4 Disc Cavity #6 Temp	Disc Cavity #6 Temperature	DegF	53.06611023
ps kct4 Disp Coeff A	Disp Coeff A	Constant	290.2279968
ps kct4 Disp Coeff AA	Disp Coeff AA	Constant	0.259176013
ps kct4 Disp Coeff B	Disp Coeff B	Constant	3.7550231 14

ps:kct4:Disp Coeff BB	Disp Coeff BB	Constant	0.999584026
ps:kct4:Disp Coeff C	Disp Coeff C	Constant	-0.00836804
ps:kct4:Disp Coeff CC	Disp Coeff CC	Constant	2.75182E-07
ps:kct4:Disp Coeff D	Disp Coeff D	Constant	0.000286768
PS:kct4:Dry Bulb Temperatu	Dry Bulb Temperature	DegF	31.00053177
PS:kct4:Electrical Skid Tem	Electrical Skid Temperatur	DegF	46.80875015
PS:kct4:Emergency Starts C	Emergency Starts Counter		41.18972397
PS:kct4:Excitation Field Cur	Excitation Field Current	Amps	0
PS:kct4:Excitation Field Volt	Excitation Field Voltage	Volts	0
PS:kct4:Exciter Bearing Drai	Exciter Bearing Drain Temp	DegF	109.6816835
PS:kct4:Exciter Cold Air Inle	Exciter Cold Air Inlet Tem	DegF	55.09772137
ps:kct4:Exciter Seismic Vibr	Exciter Seismic Vibration	mils	0.922332764
ps:kct4:Exciter Vibration (slo	Exciter Vibration (Slot 3	mils	1.491636243
PS:kct4:Exciter Warm Air Di	Exciter Warm Air Discharge	DegF	72.44880786
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	805.4035835
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	795.5829468
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	795.3588867
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	795.6622314
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	792.7363281
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	796.1594238
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	795.7223511
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	795.8543091
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #2	DegF	792.1894531
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #3	DegF	795.2433472
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #4	DegF	795.5070801
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #5	DegF	805.8717041
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #6	DegF	792.5524902
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #7	DegF	795.7305908
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #8	DegF	795.8219604
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature #9	DegF	805.3960103
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature Co	%	98.48516626
PS:kct4:Exhaust Gas Tempe	Exhaust Gas Temperature Co	DegF	798.1090088
ps:kct4:Exp Cost Per Net MW	Exp Cost Per Net MWH	$/MWH	No Good Data For This Time -110
ps:kct4:Exp Gas Net MW	Exp Gas Net MW	MW	71.56794739
ps:kct4:Exp Heat Input	Exp Heat Input	MMBTU/HR	No Good Data For This Time -110
ps:kct4:Exp Net Heat Rate	Exp Net Heat Rate	BTU/KWH	No Good Data For This Time -110
ps:kct4:Exp Total Fuel Cost	Exp Total Fuel Cost per Ho	$/HR	No Good Data For This Time -110
PS:kct4:Fast Starts Counter	Fast Starts Counter		0
PS:kct4:Fuel Control Deman	Fuel Control Demand (HSS O	%	98.35124969
ps:kct4:Fuel Cost % Deviatk	Fuel Cost % Deviation from	%/100	No Good Data For This Time -110
ps:kct4:Fuel Cost Deviation	Fuel Cost Deviation from E	$/HR	No Good Data For This Time -110
ps:kct4:Fuel Flow On-line	Fuel Flow While On-line	GPM	105.0903881
PS:kct4:Fuel Flow Signal	Fuel Flow Signal	GPM	105.1870804
PS:kct4:Fuel Nozzle Pressur	Fuel Nozzle Pressure	PSIG	664.4785767
PS:kct4:Fuel Oil Flow Divide	Fuel Oil Flow Divider Inle	DegF	78.7583313
PS:kct4:Fuel Pump Bypass '	Fuel Pump Bypass Valve Con	%	52.05027603
PS:kct4:Fuel Pump Discharg	Fuel Pump Discharge Pressu	PSIG	939.505188
PS:kct4:Fuel Pump Discharg	Fuel Pump Discharge Pressu	PSIG	940
PS:kct4:Gen Phase #1 Curr	Gen Phase #1 Current	Amps	2991.112061
PS:kct4:Gen Phase #1 Volta	Gen Phase #1 Voltage	KV	13.73888321

JEA KCT4
2003 VE/EPA9
1/24/03

PS:kct4:Gen Phase #2 Curr	Gen Phase #2 Current	Amps	2911.056885
PS:kct4:Gen Phase #2 Volta	Gen Phase #2 Voltage	KV	13.76828371
PS:kct4:Gen Phase #3 Curr	Gen Phase #3 Current	Amps	2960.190674
PS:kct4:Gen Phase #3 Volta	Gen Phase #3 Voltage	KV	13.76828371
PS:kct4:Generator Inboard E	Generator Inboard Bearing	DegF	162.0512573
PS:kct4:Generator Inlet Air T	Generator Inlet Air Temper	DegF	35.18805695
PS:kct4:Generator Outboard	Generator Outboard Bearing	DegF	140.1933301
PS:kct4:Generator Outlet Air	Generator Outlet Air Tempe	DegF	164.6374969
PS:kct4:Generator Stator Te	Generator Stator Temperatu	DegF	85.65389252
PS:kct4:Generator Stator Te	Generator Stator Temperatu	DegF	102.6430504
PS:kct4:Generator Stator Te	Generator Stator Temperatu	DegF	95.19955179
PS:kct4:Generator Stator Te	Generator Stator Temperatu	DegF	88.39111323
PS:kct4:Generator Stator Te	Generator Stator Temperatu	DegF	84.78750183
PS:kct4:Generator Stator Te	Generator Stator Temperatu	DegF	81.29053252
ps:kct4:Gross MW On-line	Gross MW While On-line	MW	71.83876038
ps:kct4:Heat Rate % Deviati	Heat Rate % Deviation	%/100	No Good Data For This Time -110
ps:kct4:Heat Rate Deviation	Heat Rate Deviation	BTU/KWH	No Good Data For This Time -110
ps:kct4:Horizontal Compress	Horizontal Compressor Vibr	mils	1.961102130
ps:kct4:Horizontal Turbine V	Horizontal Turbine Vibrati	mils	3.072819915
ps:kct4:House Load	House Load	MW	No Good Data For This Time -110
ps:kct4:HR Cost Dev A Crew	Heat Rate Cost Dev For 'A'	$/HR	No Good Data For This Time -110
ps:kct4:HR Cost Dev B Crew	Heat Rate Cost Dev For 'B'	$/HR	0
ps:kct4:HR Cost Dev C Crew	Heat Rate Cost Dev For 'C'	$/HR	0
ps:kct4:HR Cost Dev D Crew	Heat Rate Cost Dev For 'D'	$/HR	0
PS:kct4:Humidity	Humidity	%	27.82691383
PS:kct4:Ignition Failure Wait	Ignition Failure Wait Time	sec	1800
PS:kct4:Ignition Time Remai	Ignition Time Remaining	sec	0
PS:kct4:Ignition Time Setpoi	Ignition Time Setpoint	sec	30
ps:kct4:Inboard Seismic Vib	Inboard Seismic Vibration	mils	0.880659731
ps:kct4:Inboard Vibration (sl	Inboard Vibration (slot 5	mils	1.527313939
ps:kct4:Iprate	KGS CT4 PI Interface I/O R	events/min	3933.077144
PS:kct4:LNM1-3A 1-6 Spare	LNM1-3A 1-6 Spare T/C Inpu	%	1389
PS:kct4:LNM103A 14-6 Spa	LNM103A 14-6 Spare T/C Inp	%	85.20894208
PS:kct4:LNM103A 2-6 Spare	LNM103A 2-6 Spare T/C Inpu	%	1389
PS:kct4:LNM103A 5-2 Spare	LNM103A 5-2 Spare T/C Inpu	%	1389
PS:kct4:LNM103A 5-3 Spare	LNM103A 5-3 Spare T/C Inpu	%	1389
PS:kct4:LNM103A 7-2 Spare	LNM103A 7-2 Spare 4-20Ma I	%	69.89069366
PS:kct4:Load Control Setpoi	Load Control Setpoint	MW	78.39656356
PS:kct4:Lube Oil Reservoir T	Lube Oil Reservoir Tempera	DegF	146.8837433
PS:kct4:Manual Voltage Reg	Manual Voltage Regulator P	%	70
PS:kct4:Maximum Blade Pat	Maximum Blade Path Tempera	DegF	84.47305298
PS:kct4:Maximum Exhaust G	Maximum Exhaust Gas Temper	DegF	13.3997221
PS:kct4:Maximum Speed of	Maximum Speed of Turbine S	RPM	3608
PS:kct4:MCC Phase #1 Curr	MCC Phase #1 Current	Amps	237.117981
PS:kct4:MCC Phase #1 Volt	MCC Phase #1 Voltage	Volts	464.9737549
PS:kct4:MCC Phase #2 Curr	MCC Phase #2 Current	Amps	231.2713928
PS:kct4:MCC Phase #2 Volt	MCC Phase #2 Voltage	Volts	0
PS:kct4:MCC Phase #3 Curr	MCC Phase #3 Current	Amps	235.4282074
PS:kct4:MCC Phase #3 Volt	MCC Phase #3 Voltage	Volts	464.975464
PS:kct4:Mechanical Skid Te	Mechanical Skid Temperatur	DegF	70.07743835

JEA KCT4
2003 VE/EPA9
1/24/03

PS.kct4.MegaVAR Control S	MegaVAR Control Setpoint	MVAR	0
PS.kct4.MegaVAR Load Sig	MegaVAR Load Signal	MVAR	6.579430103
PS.kct4.MegaWatt Load Sig	MegaWatt Load Signal	MW	71.83449554
PS.kct4.Min Fuel Setting	Min Fuel Setting	%	0

Ambient Air Services, Inc.

106 Ambient Airway • Starke, FL 32091 • (904) 964-8440 • Fax (904) 964-6675

March 03, 2003

Mr. Joseph W. Werner, P.E.
JEA
4377 Heckscher Dr.
Jacksonville, FL 32226

SUBJECT: Visible Emissions Tests
Kennedy Generating Station
Combustion Turbines 3, 4, 5

Dear Mr. Werner:

Included with this letter are the visible emissions tests for the three combustion turbines tested on January 24, 2003. A copy of the Field Data Test Sheet, the Visible Emissions Test Data sheets, the Process Weight Certifications, and a copy of the Observer's Certification should be sent to the City's Air and Water Quality Division within 45 days of the test date of January 24, 2003. It should be sent to:

Mr. Wayne L. Walker
Environmental Specialist
Air and Water Quality Division
City of Jacksonville
117 West Duval Street, Suite 225
Jacksonville, Florida 32202

If you have any questions, please contact me at your convenience at (904) 964-8440.

Sincerely,

George H Hawkins
Senior Technician

VISIBLE EMISSIONS
TEST DATA

FACILITY:	Jacksonville Electric Authority.
FACILITY ADDRESS:	4215 Talleyrand Ave. Jacksonville, Florida 32206
MAILING ADDRESS:	21 West Church Street Jacksonville, FL 32202-3139
SOURCE IDENTIFICATION:	Combustion Turbines Nos. 3, 4, 5
COMPANY CONTACT:	Joseph Werner, P.E.
TEST CONDUCTED BY:	George H Hawkins
TEST DATE AND TIME:	January 24, 2003 Turbine No. 3: 1131 - 1231 Hrs Turbine No. 4: 1131 – 1231 Hrs Turbine No. 5: 0915 – 1015 Hrs

COMMENTS: Standard tests, no exceptions.

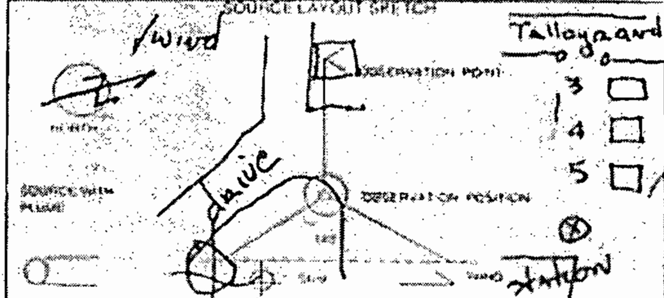
Ambient Air Services, Inc.
106 Ambient Airway **No. 5**
Starke, Florida 32091
OFFICE 904 964-6148 FAX 904 964-6675

PAGE	1 OF 1
START TIME	0915
END TIME	1015
OBSERVATION DATE	01/24/03
TIME ZONE	Eastern

FACILITY	JEA Kennedy
SOURCE	No 5 turbine
ADDRESS	Talleyrand Ave
CITY	Jacksonville
STATE	FL 32206
PHONE	
SOURCE ID NO	
PROCESS	gas turbine
OPERATING MODE	305 continual
CONTROL EQUIP	—
OPERATING MODE	—
DESCRIBE EMISSION POINT	of 3 turbines Near gate, most eastern
HEIGHT OF EMISSION POINT	START ~50 END 50'
HEIGHT RELATIVE TO OBSERVER	START ~42 END 42
DISTANCE TO EMISSIONS POINT	START ~120' END 120'
DIRECTION TO EM. PT	START 280 END 280
VERTICAL ANGLE TO OBS. PT	START ~12° END 12°
DESCRIBE EMISSIONS	START fan exhaust END same
EMISSION COLOR	START black END black
WATER DROPLET PLUME	YES (NO) — ATTACHED / DETACHED
DESCRIBE PLUME BACKGROUND	START sky END sky
BACKGROUND COLOR	START blue END blue
SKY CONDITION	START clear END clear
WIND SPEED	mph START 10-12 END
WIND DIRECTION	START NW END N
AMBIENT TEMPERATURE	START <30 END <30
WET BULB TEMP	<30
%RH	58?
COMMENTS	rectangular stack

SEC / MIN	0	15	30	45	SEC / MIN	0	15	30	45
1	10	10	10	10	31	10	10	10	10
2	15	10	10	10	32	15	10	15	10
3	10	10	10	10	33	10	15	10	5
4	10	10	10	10	34	5	5	5	5
5	5	5	5	5	35	10	10	10	10
6	10	5	5	5	36	10	10	10	10
7	10	10	5	5	37	10	10	10	10
8	10	5	5	5	38	15	10	15	15
9	5	5	10	5	39	10	10	10	5
10	5	10	5	5	40	10	5	5	10
11	10	5	5	5	41	10	5	5	15
12	5	10	10	5	42	10	15	10	5
13	5	5	10	10	43	5	10	10	10
14	10	10	10	10	44	5	10	10	10
15	10	10	10	10	45	10	10	15	15
16	10	10	10	10	46	10	5	5	10
17	15	20	15	20	47	10	10	10	10
18	10	10	10	10	48	10	10	10	10
19	10	10	10	10	49	10	10	10	10
20	10	10	10	10	50	10	10	15	15
21	10	10	10	10	51	20	10	10	10
22	5	5	5	5	52	5	5	5	10
23	10	10	5	10	53	5	10	10	10
24	10	5	10	10	54	15	15	10	10
25	10	5	10	10	55	10	10	10	10
26	10	10	5	10	56	10	15	10	10
27	10	10	10	5	57	10	10	10	10
28	10	10	5	10	58	15	10	10	10
29	10	5	10	10	59	10	15	10	10
30	5	10	10	10	60	10	10	15	10

SOURCE LAYOUT SKETCH



AVERAGE OPACITY FOR HIGHEST PERIOD	11 %
OBSERVER'S NAME (PRINT)	George H Hawkins
SIGNATURE	George H Hawkins
DATE	01/24/03
ORGANIZATION	AMBIENT AIR SERVICES, INC. (AASI)
CERTIFIED BY	Eastern Technical Assoc
DATE	12/06/02

Revision 1: 12/07/2002

AASI Form 45

02/21/03

JEA

Mr. Joseph L. Cooksey, President
Ambient Air Services Services, Inc
106 Ambient Air Way
Starke, FL 32091

Dear Sir,

#2FO environmental VE/EPA9 testing was conducted on JEA J.D. Kennedy Generating Station Combustion Turbine #5 (KCT5) on 1/24/03.

The unit operational data for this test is as follows.

		EPA9/VE
MWe(sscc)		73.49
Comp In DEGF		38.61
H2O gpm		0.00
#2FO gpm		103.03
BTU/# - HHV		19502
Specific Gravity		0.8546
#/gal		7.1171
BTU/gal - HHV		138799
MMBTU/hr		8.573E+03
		AVERAGE
Start	EST	1/24/03 9:15 AM
Finish	EST	1/24/03 10:15 AM

To the best of my knowlege, this information is true and accurate.

Sincerely,

Joseph W. Werner

Joseph W. Werner, PE

JEA Laboratory Services4377 Heckscher Drive Jacksonville, FL 32226
(904) 665-6724 FAX: (904) 665-6721

Fuel Oil Report

Lab ID: F030134K1FO2XX0
Sample Number: 03-0089
Sample Date: 01/24/2003
Sample Time: 1100

Station/Unit: Kennedy 1
Sample Type: Fuel Oil 2
Sample Desc: TK3 #2FO
Report Date: 01/27/2003

Result	Value	Units
BTU/lb	19502	BTU/lb
Water by KF	0.0012	%
S (X-Ray)	0.0352	%
Specific Gravity	.8516	

Report Comments:

Submitted by: C Jackson

JEA KCT5
2003 VE/EPA9
1/24/03

JEA J.D.Kennedy Generating Staton
Combustion Turbine #5 (JEA KCT5)
Bi-Annual EPA9 Environmental Testing
#2FO 1/24/03

RUN #	1	w/o fogger
MWe(socc)	73.49	
Comp In DEGF	39.61	
H2O gpm	0.00	
#2FO gpm	103.00	
BTU/# - HHV	19502	
Specific Gravity	0.8546	
#gal	7.1171	(K = 8.328)
BTU/gal - HHV	138798	
MMBTU/hr	8.578E+08	

AVERAGE

Start	EST	1/24/03 9:15 AM
Finish	EST	1/24/03 10:15 AM

PS kct5:Aborts Counter	Aborts Counter		2
PS kct5:Accel/Decel Rate	Accel/Decel Rate	RPM	0
PS:kct5:Alarms #1 through #	Alarms #1 through #16		No Good Data For This Time -110
PS:kct5:Alarms #113 throug	Alarms #113 through #128		No Good Data For This Time -110
PS:kct5:Alarms #129 throug	Alarms #129 through #144		No Good Data For This Time -110
PS kct5:Alarms #145 throug	Alarms #145 through #160		No Good Data For This Time -110
PS:kct5:Alarms #161 throug	Alarms #161 through #176		No Good Data For This Time -110
PS:kct5:Alarms #17 through	Alarms #17 through #32		No Good Data For This Time -110
PS:kct5:Alarms #177 throug	Alarms #177 through #192		No Good Data For This Time -110
PS:kct5:Alarms #193 throug	Alarms #193 through #208		No Good Data For This Time -110
PS kct5:Alarms #209 throug	Alarms #209 through #224		No Good Data For This Time -110
PS:kct5:Alarms #225 throug	Alarms #225 through #240		No Good Data For This Time -110
PS kct5:Alarms #241 throug	Alarms #241 through #256		No Good Data For This Time -110
PS:kct5:Alarms #257 throug	Alarms #257 through #272		No Good Data For This Time -110
PS kct5:Alarms #33 through	Alarms #33 through #48		No Good Data For This Time -110
PS kct5:Alarms #49 through	Alarms #49 through #64		No Good Data For This Time -110
PS:kct5:Alarms #65 through	Alarms #65 through #80		No Good Data For This Time -110
PS:kct5:Alarms #81 through	Alarms #81 through #96		No Good Data For This Time -110
PS:kct5:Alarms #97 through	Alarms #97 through #112		No Good Data For This Time -110
PS kct5:Anti-Surge Limiter C	Anti-Surge Limiter Control	%	99.68930817
PS:kct5:Atomizing Air Pres	Atomizing Air Pressure	PSIG	136
PS:kct5:Atomizing Air Tank I	Atomizing Air Tank Pressur	PSIG	187.0639496
PS:kct5:Auto Voltage Regul	Auto Voltage Regulator Pos	%	34.85445618
PS kct5:Average Blade Path	Average Blade Path Tempera	DegF	788.4816946
PS kct5 Average Cold Junct	Average Cold Junction Comp	DegF	62.82502908
PS kct5 Average Exhaust G	Average Exhaust Gas Temper	DegF	793.9136597
PS kct5 Base Load Hours Ti	Base Load Hours Timer	Hours	51.33555603
PS kct5 Bearing #4 Comp Jr	Bearing #4 Comp Journal Ba	DegF	183.5590057
PS kct5 Bearing #5 Babbit T	Bearing #5 Babbit Tempera	DegF	46.52750778

PS kct5 Bearing Lube Oil Pr	Bearing Lube Oil Pressure	PSIG	18
PS kct5 Bearing Oil Supply T	Bearing Oil Supply Tempera	DegF	114.5030594
PS kct5 Blade Path Temper	Blade Path Temperature #1	DegF	771.2534888
PS kct5 Blade Path Temper	Blade Path Temperature #10	DegF	919.2657471
PS kct5 Blade Path Temper	Blade Path Temperature #11	DegF	791.3395386
PS kct5 Blade Path Temper	Blade Path Temperature #12	DegF	831.9285889
PS kct5 Blade Path Temper	Blade Path Temperature #13	DegF	761.9025259
PS kct5 Blade Path Temper	Blade Path Temperature #14	DegF	781.0836182
PS kct5 Blade Path Temper	Blade Path Temperature #15	DegF	780.1512451
PS kct5 Blade Path Temper	Blade Path Temperature #16	DegF	781.3190918
PS kct5 Blade Path Temper	Blade Path Temperature #2	DegF	824.0539551
PS kct5 Blade Path Temper	Blade Path Temperature #3	DegF	803.4873657
PS kct5 Blade Path Temper	Blade Path Temperature #4	DegF	734.7045898
PS kct5 Blade Path Temper	Blade Path Temperature #5	DegF	788.1004028
PS kct5 Blade Path Temper	Blade Path Temperature #6	DegF	776.0805689
PS kct5 Blade Path Temper	Blade Path Temperature #7	DegF	790.347229
PS kct5 Blade Path Temper	Blade Path Temperature #8	DegF	757.3389893
PS kct5 Blade Path Temper	Blade Path Temperature #9	DegF	823.8962402
PS kct5 Blade Path Temper	Blade Path Temperature Con	%	101
PS kct5 Blade Path Temper	Blade Path Temperature Cor	DegF	845.3392944
PS kct5 Bus Frequency	Bus Frequency	Hz	59.39638901
PS kct5 Bus Phase #1 Volta	Bus Phase #1 Voltage	KV	13.31110573
PS kct5 Bus Phase #2 Volta	Bus Phase #2 Voltage	KV	13.35853672
PS kct5 Bus Phase #3 Volta	Bus Phase #3 Voltage	KV	13.35853672
PS kct5 Bypass Valve Posit	Bypass Valve Position	%	62
PS kct5 Calculated Power F	Calculated Power Factor		98.62425995
PS kct5 Combustor Shell Pr	Combustor Shell Pressure (	PSIG	149.6895905
PS kct5 Compressor Discha	Compressor Discharge Tempe	DegF	No Good Data For This Time -110
PS kct5 Compressor Inlet Le	Compressor Inlet Left Temp	DegF	38.19361115
PS kct5 Compressor Inlet Ri	Compressor Inlet Right Tem	DegF	39.0359726
PS kct5 Compressor Seismi	Compressor Seismic Vibrati	mils	1.160050511
PS kct5 Control LSS Output	Control LSS Output	%	99.6554184
PS kct5 Cooldown Time Rer	Cooldown Time Remaining	sec	0
PS kct5 Cooldown Time Sep	Cooldown Time Setpoint	sec	120
PS kct5 Cooling Adjust Setp	Water Injection Cooling Ad	%	0
PS kct5 Cooling Air Temper	Cooling Air Temperature	DegF	339.2559607
ps kct5 Cost Per Net MWH	Cost Per Net MWH	$/MWH	No Good Data For This Time -110
ps kct5 Cost Per Net MWH -	Cost Per Net MWH - Smoothe	$/MWH	No Good Data For This Time -110
ps kct5 Dev from Exp Cost p	Dev from Exp Cost per Net	$/MWH	No Good Data For This Time -110
PS kct5 Disc Cavity #2-1 Te	Disc Cavity #2-1 Temperatu	DegF	597.1981201
PS kct5 Disc Cavity #2-2 Te	Disc Cavity #2-2 Temperatu	DegF	659.4369507
PS kct5 Disc Cavity #3-1 Te	Disc Cavity #3-1 Temperatu	DegF	600.7551035
PS kct5 Disc Cavity #3-2 Te	Disc Cavity #3-2 Temperatu	DegF	590.1830869
PS kct5 Disc Cavity #4-1 Te	Disc Cavity #4-1 Temperatu	DegF	653.3754272
PS kct5 Disc Cavity #4-2 Te	Disc Cavity #4-2 Temperatu	DegF	187.4944458
PS kct5 Disc Cavity #5 Tem	Disc Cavity #5 Temperature	DegF	57.03368683
PS kct5 Disc Cavity #6 Tem	Disc Cavity #6 Temperature	DegF	600.2358752
ps kct5 Disp Coeff A	Disp Coeff A	Constant	230.2279358
ps kct5 Disp Coeff AA	Disp Coeff AA	Constant	0.250176013
ps kct5 Disp Coeff B	Disp Coeff B	Constant	8.755000114

ps:kct5:Disp Coeff BB	Disp Coeff BB	Constant	0.999984926
ps:kct5:Disp Coeff C	Disp Coeff C	Constant	-0.00330804
ps:kct5 Disp Coeff CC	Disp Coeff CC	Constant	2.75182E-07
ps:kct5.Disp Coeff D	Disp Coeff D	Constant	0.000286768
PS:kct5.Dry Bulb Temperatu	Dry Bulb Temperature	DegF	24.41275024
PS:kct5:Electrical Skid Tem	Electrical Skid Temperatur	DegF	39.12055588
PS:kct5 Emergency Starts C	Emergency Starts Counter		45.77444458
PS:kct5:Excitation Field Cur	Excitation Field Current	Amps	0
PS:kct5.Excitation Field Volt	Excitation Field Voltage	Volts	0
PS:kct5 Exciter Bearing Drai	Exciter Bearing Drain Temp	DegF	108.000946
PS:kct5:Exciter Cold Air Inle	Exciter Cold Air Inlet Tem	DegF	57.94152832
PS:kct5 Exciter Seismic Vibr	Exciter Seismic Vibration	mils	1.155484557
PS:kct5:Exciter Vibration (st	Exciter Vibration (Set 3,	mils	2.550082922
PS:kct5:Exciter Warm Air Di	Exciter Warm Air Discharge	DegF	61.41430664
PS:kct5.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	789.6702881
PS:kct5.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	796.7366943
PS:kct5:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	796.5575562
PS:kct5:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	790.3259277
PS:kct5:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	793.4097534
PS:kct5.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	792.9430046
PS:kct5.Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	790.0463257
PS:kct5:Exhaust Gas Tempe	Exhaust Gas Temperature #1	DegF	787.2567139
PS:kct5.Exhaust Gas Tempe	Exhaust Gas Temperature #2	DegF	798.360779
PS:kct5:Exhaust Gas Tempe	Exhaust Gas Temperature #3	DegF	799.7806396
PS:kct5:Exhaust Gas Tempe	Exhaust Gas Temperature #4	DegF	797.010437
PS:kct5:Exhaust Gas Tempe	Exhaust Gas Temperature #5	DegF	793.8514404
PS:kct5:Exhaust Gas Tempe	Exhaust Gas Temperature #6	DegF	798.1026001
PS:kct5:Exhaust Gas Tempe	Exhaust Gas Temperature #7	DegF	801.3565015
PS:kct5.Exhaust Gas Tempe	Exhaust Gas Temperature #8	DegF	795.5615234
PS:kct5.Exhaust Gas Tempe	Exhaust Gas Temperature #9	DegF	782.7478638
PS:kct5.Exhaust Gas Tempe	Exhaust Gas Temperature Co	%	99.70610809
PS:kct5.Exhaust Gas Tempe	Exhaust Gas Temperature Co	DegF	795.2183899
ps:kct5:Exp Cost Per Net MI	Exp Cost Per Net MWH	$/MWH	No Good Data For This Time -110
ps:kct5:Exp Gas Net MW	Exp Gas Net MW	MW	73.30396023
ps:kct5:Exp Heat Input	Exp Heat Input	MMBTU/HR	No Good Data For This Time -110
ps:kct5:Exp Net Heat Rate	Exp Net Heat Rate	BTU/KWH	No Good Data For This Time -110
ps:kct5:Exp Total Fuel Cost	Exp Total Fuel Cost per Ho	$/HR	No Good Data For This Time -110
PS:kct5.Fuel Control Deman	Fuel Control Demand (HSS O	%	99.66486359
ps:kct5:Fuel Cost % Deviat	Fuel Cost % Deviation from	%/100	No Good Data For This Time -110
ps:kct5:Fuel Cost Deviation	Fuel Cost Deviation from E	$/HR	No Good Data For This Time -110
ps:kct5:Fuel Flow While On	Fuel Flow While On line	GPM	103.8501
PS:kct5:Fuel Flow Signal	Fuel Flow Signal	GPM	103
PS:kct5:Fuel Nozzle Pressur	Fuel Nozzle Pressure	PSIG	695.7704468
PS:kct5:Fuel Oil Flow Divide	Fuel Oil Flow Divider Inle	DegF	46.39638901
PS:kct5:Fuel Pump Bypass	Fuel Pump Bypass Valve Con	%	63.98654556
PS:kct5:Fuel Pump Discharg	Fuel Pump Discharge Pressu	PSIG	939.1041687
PS:kct5:Fuel Pump Discharg	Fuel Pump Discharge Pressu	PSIG	940
PS:kct5:Gen Phase #1 Curre	Gen Phase #1 Current	Amps	3092.420654
PS:kct5:Gen Phase #1 Volta	Gen Phase #1 Voltage	KV	13.31110573
PS:kct5:Gen Phase #2 Curre	Gen Phase #2 Current	Amps	3027.768646

PS:kct5:Gen Phase #2 Volta	Gen Phase #2 Voltage	KV	13.31110573
PS:kct5:Gen Phase #3 Curr	Gen Phase #3 Current	Amps	3027.353027
PS:kct5:Gen Phase #3 Volta	Gen Phase #3 Voltage	KV	13.32506847
PS:kct5:Generator Inboard E	Generator Inboard Bearing	DegF	95.6186142
PS:kct5:Generator Inlet Air T	Generator Inlet Air Temper	DegF	27.49707031
PS:kct5:Generator Outboard	Generator Outboard Bearing	DegF	102.1324768
PS:kct5:Generator Outlet Air	Generator Outlet Air Tempe	DegF	108.1449966
PS:kct5:Generator Stator Te	Generator Stator Temperatu	DegF	99.81874847
PS:kct5:Generator Stator Te	Generator Stator Temperatu	DegF	95.06972504
PS:kct5:Generator Stator Te	Generator Stator Temperatu	DegF	84.21440125
PS:kct5:Generator Stator Te	Generator Stator Temperatu	DegF	96.60110931
PS:kct5:Generator Stator Te	Generator Stator Temperatu	DegF	98.73682404
PS:kct5:Generator Stator Te	Generator Stator Temperatu	DegF	99.48658752
ps:kct5:Gross MW On-line	Gross MW While On-line	MW	73.52011108
ps:kct5:Heat Rate % Deviati	Heat Rate % Deviation	%/100	No Good Data For This Time -110
ps:kct5:Heat Rate Deviation	Heat Rate Deviation	BTU/KWH	No Good Data For This Time -110
PS:kct5:Horizontal Compres	Horizontal Compressor Vibr	mils	1.610820966
PS:kct5:Horizontal Turbine V	Horizontal Turbine Vibrati	mils	3.728718281
ps:kct5:House Load	House Load	MW	No Good Data For This Time -110
ps:kct5:HR Cost Dev A Crew	Heat Rate Cost Dev For 'A'	$/HR	No Good Data For This Time -110
ps:kct5:HR Cost Dev B Crew	Heat Rate Cost Dev For 'B'	$/HR	0
ps:kct5:HR Cost Dev C Crew	Heat Rate Cost Dev For 'C'	$/HR	0
ps:kct5:HR Cost Dev D Crew	Heat Rate Cost Dev For 'D'	$/HR	0
PS:kct5:Humidity	Humidity	%	37.90087128
PS:kct5:Ignition Failure Wait	Ignition Failure Wait Time	sec	600
PS:kct5:Ignition Time Remai	Ignition Time Remaining	sec	0
PS:kct5:Ignition Time Setpoi	Ignition Time Setpoint	sec	44
PS:kct5:Inboard Seismic Vib	Inboard Seismic Vibration	mils	1.747851729
PS:kct5:Inboard Vibration (s	Inboard Vibration (slot 5,	mils	1.681049156
ps:kct5:Interface	KGS CT5 PI Interface I/O R	events/min	2383.027344
PS:kct5:LNM1-3A 1-6 Spare	LNM1-3A 1-6 Spare T/C Inpu	%	1063
PS:kct5:LNM103A 1-6 Spa	LNM103A 1-6 Spare T/C Inp	%	1055
PS:kct5:LNM103A 2-6 Spare	LNM103A 2-6 Spare T/C Inpu	%	1063
PS:kct5:LNM103A 5-2 Spare	LNM103A 5-2 Spare T/C Inpu	%	332.9333557
PS:kct5:LNM103A 5-3 Spare	LNM103A 5-3 Spare T/C Inpu	%	1063
PS:kct5:LNM103A 7-2 Spare	LNM103A 7-2 Spare 4-20Ma I	%	70.44060598
PS:kct5:Load Control Setpoi	Load Control Setpoint	MW	80.99612427
PS:kct5:Lube Oil Reservoir T	Lube Oil Reservoir Tempera	DegF	142.8538818
PS:kct5:Manual Voltage Reg	Manual Voltage Regulator P	%	48
PS:kct5:Maximum Blade Pat	Maximum Blade Path Tempera	DegF	1056.75820374
PS:kct5:Maximum Exhaust G	Maximum Exhaust Gas Temper	DegF	1018.27819443
PS:kct5:Maximum Speed of	Maximum Speed of Turbine S	RPM	3873
PS:kct5:MCC Phase #1 Curr	MCC Phase #1 Current	Amps	229.9635315
PS:kct5:MCC Phase #1 Volt	MCC Phase #1 Voltage	Volts	458.6952097
PS:kct5:MCC Phase #2 Curr	MCC Phase #2 Current	Amps	222.6063202
PS:kct5:MCC Phase #2 Volt	MCC Phase #2 Voltage	Volts	0
PS:kct5:MCC Phase #3 Curr	MCC Phase #3 Current	Amps	230.5311641
PS:kct5:MCC Phase #3 Volt	MCC Phase #3 Voltage	Volts	456.8228455
PS:kct5:Mechanical Skid Te	Mechanical Skid Temperatur	DegF	60.56361328
PS:kct5:MegaVAR Control S	MegaVAR Control Setpoint	MVAR	17

JEA KCT5
2003 VE/EPA9
1/24/03

PS:kct5 MegaVAR Load Sig	MegaVAR Load Signal	MVAR	12.26552773
PS:kct5:MegaWatt Load Sig	MegaWatt Load Signal	MW	73.48703003
PS:kct5 Min Fuel Setting	Min Fuel Setting	%	0
ps:kct5 MW Capability	MW Capability	MMBTU/HR	65.6270752
ps:kct5:MW Capability Interc	MW Capability Intercept	Constant	76.[illegible]9685
ps:kct5:MW Capability Slope	MW Capability Slope	Constant	-0.289899992
ps:kct5:Net Heat Rate	Net Heat Rate	BTU/KWH	No Good Data For This Time -110
ps:kct5:Net Heat Rate - Smc	Net Heat Rate - Smoothed	BTU/KWH	No Good Data For This Time -110
ps:kct5:Net Megawatts	Net Megawatts	MW	No Good Data For This Time -110
PS:kct5:Normal Starts Coun	Normal Starts Counter		0
PS:kct5:Nose Cone Temper	Nose Cone Temperature	DegF	332.0130615
PS:kct5:Number of BP TCs	Number of BP TC's in Avera		16
PS:kct5:Number of EGT TC:	Number of EGT TC's in Aver		16
PS:kct5:Number of First Out	Number of First Out Trip		0
PS:kct5:Outboard Seismic V	Outboard Seismic Vibration	mils	0.549972951
PS:kct5:Outboard Vibration (	Outboard Vibration (slot 4	mils	1.649992095
PS:kct5:Overspeed Test Tim	Overspeed Test Timer	Secs	0
PS:kct5:Peak Reserve Load	Peak Reserve Load Hours Ti	Hours	0
PS:kct5:Post Lube Time Rer	Post Lube Time Remaining	min	4320
PS:kct5:Post Lube Time Set	Post Lube Time Setpoint	min	4320
PS:kct5:Power Factor Contr	Power Factor Control Setpo		84.99862671
PS:kct5:Purge Time Remain	Purge Time Remaining	sec	0
PS:kct5:Purge Time Setpoin	Purge Time Setpoint	sec	10
PS:kct5:Spare Seismic Vibr	Spare Seismic Vibration (s	mils	0
PS:kct5:Spare Vibration (slo	Spare Vibration (slot 3,ch	mils	0
PS:kct5:Spare Vibration (slo	Spare Vibration (slot 4,ch	mils	0
PS:kct5:Spare Vibration (slo	Spare Vibration (slot 5,ch	mils	0
PS:kct5:Speed Control Setp	Speed Control Setpoint	RPM	3600
PS:kct5:Speed/Load Control	Speed/Load Control PID Sig	%	100
PS:kct5:Start Motor Failure \	Start Motor Failure Wait T	sec	2400
PS:kct5:Start Ramp Control	Start Ramp Control Signal	%	101
ps:kct5 Starts Per Day	Total Starts Per Day		0
ps:kct5 Stops Per Day	Total Stops Per Day		1
PS:kct5:Synchronizer Speed	Synchronizer Speed Bias	%	0
PS:kct5:Throttle Valve Contr	Throttle Valve Control Sig	%	98.88684082
PS:kct5:Throttle Valve Posit	Throttle Valve Position	%	100.7052765
PS:kct5:Thrust Bearing Babl	Thrust Bearing Babbitt (Ge	DegF	154.2444458
PS:kct5:Thrust Bearing Babl	Thrust Bearing Babbitt (Tu	DegF	150.6952043
ps:kct5 Time On-Line	Total Time Unit On-Line		16.31277847
PS:kct5:Too Many Ignition F	Too Many Ignition Failures	sec	3600
ps:kct5:Total Fuel Cost per H	Total Fuel Cost per Hour	$/HR	4033.730469
ps:kct5:Total Fuel Used	Total Fuel Consumed	gallons	0
PS:kct5:Trips #1 through #16	Trips #1 through #16		No Good Data For This Time -110
PS:kct5:Trips #17 through #:	Trips #17 through #32		No Good Data For This Time -110
PS:kct5:Trips #33 through #4	Trips #33 through #48		No Good Data For This Time -110
PS:kct5:Trips #49 through #(	Trips #49 through #64		No Good Data For This Time -110
PS:kct5:Turbine Compartme	Turbine Compartment Fan #2	DegF	139.6554565
PS:kct5:Turbine Compartme	Turbine Compartment Fan #4	DegF	52.22216797
PS:kct5:Turbine Seismic Vib	Turbine Seismic Vibration	mils	0
PS:kct5:Turbine Speed	Turbine Speed	RPM	3599.555176

PS:kct5:Turning Gear Cycle	Turning Gear Cycling 'Off'	sec	14400
PS:kct5:Turning Gear Cycle	Turning Gear Cycling 'Off'	sec	14400
PS:kct5:Turning Gear Cycle	Turning Gear Cycling 'On'	sec	0
PS:kct5:Turning Gear Cycle	Turning Gear Cycling 'On'	sec	600
ps:kct5 Unit Start	Unit Start Indicator	# of Starts	0
ps:kct5:Unit Stop	Unit Stop Indicator	# of Shutdow	0
PS:kct5:Vertical Compresso	Vertical Compressor Vibrat	mils	1.83703699
PS:kct5:Vertical Turbine Vib	Vertical Turbine Vibration	mils	4.511680126
PS:kct5:Voltage Regulator D	Voltage Regulator DC Curre	Amps	11.99847221
PS:kct5:Voltage Regulator D	Voltage Regulator DC Volts	Volts	14.08444405
PS:kct5:Voltage Regulator N	Voltage Regulator Null Sig	%	14.99236069
PS:kct5 Water Injection Flow	Water Injection Flow	GPM	0
PS:kct5:Wet Bulb Depressio	Wet Bulb Depression	DegF	4.971949577
PS:kct5 Wet Bulb Depressio	Wet Bulb Depression Effici	%	0
PS:kct5:Wet Bulb Temperati	Wet Bulb Temperature	DegF	18.69107246

JAXFOS

6/5/2003

302725

IBLE EMISSIONS EVALUATOR

This is to certify that

George Hawkins

met the specifications of Federal Reference Method 9 and qualified as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, North Carolina. This certificate is valid for six months from date of issue.

302725	*Jacksonville, Florida*	*December 4, 2002*
Certificate Number	Location	Date of Issue

President

Director of Training

United States
Environmental Protection Agency
Acid Rain Program

OMB No. 2060-0258

Certification Application

For more information, see instructions and refer to 40 CFR 75.63

This submission is for: • Initial Certification (• Recertification)

STEP 1
Identify the source by plant name, State, and ORIS Code from NADB

Plant Name	State	ORIS Code
KENNEDY GENERATING Station	FL	000666

STEP 2
Identify unit short name/common stack description and boiler ID#/common stack ID#

Unit Short Name/Common Stack Description	Boiler/Common Stack ID#
KCT7	7

STEP 3
Mark the appropriate box and fill in if necessary

(• Included is a copy of the monitoring plan)))))))))))))))))))))))•

No. of pages 8

• No monitoring plan included

STEP 4
Provide the requested information for the monitoring systems and for the test data that are being submitted

Use page 2 to provide information for additional units/common stacks at this source or for units/common stacks with more than 10 systems

MONITORING SYSTEMS			TEST DATA		
System ID#	Parameter Monitored	Primary/ Backup	Testing Date(s) *(mm/dd/yy-mm/dd/yy)*	Number of Tests (Total)	Number of Failed Tests
101	NOx	P	05/22/06 – 07/31/06	4	0

STEP 5
Complete the boxes

Included are test results for systems listed in Step 4 Table(s))))))))))(•

No. of pages 75

Included is DAHS verification test information)))))))))))))))))))•

No. of pages

STEP 6
Read the certification, enter the name of the designated representative, and sign and date

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name	
Signature	Date

CEMS Certification Test Program

40 CFR 75 – Certification Test Report

Prepared by:

JEA
Kennedy Generating Station – Unit 7
4215 Talleyrand Avenue
Jacksonville, Florida 32206

Report Date: September 12, 2006
Revision Number: 0

TABLE OF CONTENTS

1.0 Introduction

The Kennedy Generating Station is located at 4215 Talleyrand Avenue in Jacksonville, FL, and Kennedy CT#7 is a simple cycle, combustion turbine-based power plant consisting of one nominal 170 MW GE 7FA class combustion turbine electrical generator. Emissions from the Kennedy CT#7 unit are controlled by Dry Low NOx combustors and water injection. The combustion turbine may operate while firing natural gas fuel or while firing diesel oil. The CEMS required recertification testing due to a NOx analyzer replacement.

1.1 Analyzer Information

Analyzer	Manufacturer/Model	Span Range(s)	Serial Number
NOx	Thermo 42 CLS	High 200, Low 20	42C-67847-365
O2	Servomex 1440C	0-25	1435

1.2 Summary of Results

The results of the CEMS relative accuracy tests are summarized in Table 1. The test results and field data are located in Section 3 of this report. The relative accuracy test results are expressed as a percentage of the mean reference method results.

The results for the 7 day calibration error, linearity check, and cycle time tests for all required monitors are summarized in Results Tables 2 and 3. The test results and field data for these tests are located in Section 2 of this report.

Results Table 1: Relative Accuracy Results

System	Results	Semi-Annual	Annual	Status	Test Date
NOx	1.7 %	<=10.0%	<=7.5%	Pass	07/31/06
Bias Adjustment Test					
System		**Bias Test Status**		**Bias Adjustment Factor**	
NOx		Pass		1.00	

Results Table 2: NOx Analyzer Results

Test Type	Results	Criteria	Status	Test Date(s)
Linearity Check	Low = 1.7 ppm Mid = 4.1 % High = 2.6 %	<=5% of reference or <=5 ppm difference	Pass	06/01/06
Cycle Time	3 minutes	<=15 minutes	Pass	06/22/06
Highest Calibration Error- Zero Drift	0.0 %	<=2.5% of span	Pass	05/22/06-05/30/06
Highest Calibration Error- Span Drift	0.8 %	<=2.5% of span	Pass	05/22/06-05/30/06

Results Table 3: O2 Analyzer Results

Test Type	Results	Criteria	Status	Test Date(s)
Cycle Time	3 minutes	<=15 minutes	Pass	06/22/06

1.3.1. Test Procedures

The test procedures used for this program were in accordance with the methods as outlined in the Code of Federal Regulations (CFR), Title 40, Part 75, Appendix A.

1.3.2. Calibration Error Test

The Calibration Error Test (7-day drift) was performed in accordance with 40 CFR 75, Appendix A, Section 6.3.1. The Calibration Error Test consists of measuring the calibration error of the NOx monitor scale once each day for seven (7) consecutive operating (on line) days.

In accordance with 40 CFR 75, Appendix A, Section 6.3.1, results of the 7-Day Calibration Error Test are acceptable if the daily calibration error does not exceed 2.5 % of span.

Calibrations are performed automatically at 24-hour intervals by the PLC during the operational test period. The readings for each analyzer are taken from the Data Acquisition and Handling System (DAHS) at the completion of the calibration routine. Copies of the DAHS reports are contained in Section 2 of this report.

The percent calibration error is determined using the following equation:

Equation A-6, 40 CFR 75, Appendix A

$$CE = \frac{|R - A|}{S} \times 100$$

Primary Equation for Pass/Fail

Where CE = Calibration error as a percentage of instrument span
R = Zero or high level calibration gas value, ppm, %
A = Actual monitor response to calibration gas, ppm, %
S = Span of the instrument

1.3.2 Linearity Check

The linearity check test was conducted in accordance with the 40 CFR 75, Appendix A. EPA traceability protocol 1 gases were used to conduct the linearity checks of the analyzers. Three points (concentrations) of calibration gases (low, mid, and high) were introduced at the probe (40 CFR 75, Appendix A, Section 5.2). Each monitor was challenged three times with the appropriate reference gas, without using the same gas twice in succession. The monitors' response for each concentration was recorded. The averages of the three responses were used to calculate the linearity error (40 CFR 75, Appendix A, Section 6.2).

$$LE = |R - A| \qquad LE = \frac{|R - A|}{R} \times 100$$

The linearity error results were calculated using the following equation (40 CFR 75, Appendix A, Section 7.1, Equation A-4):

$$LE = \frac{|R - A|}{R} \times 100$$

Pollutant Analyzer

$$LE = |R - A|$$

Secondary equation for Pass/Fail

Where:
LE = % linearity error

R = cal gas value
A = average of monitor response

Linearity checks are acceptable for monitor Certification if none of the test results exceed the applicable performance specification of 40 CFR 75, Appendix A, Section 3.2. The results of the NOx and O2 shall be less than 5.0% as calculated by the above equation or the alternative criteria of <=0.5% O2 or <= 5ppm difference for NOx.

1.3.3. Cycle Time

The cycle time test measures the monitor's reaction time to a change in gas concentration. A low level calibration gas was injected at the probe sample interface. Gas injection at the probe continued until a stable response was reached. Next the monitor was switched to monitor flue gas until a stable reading was achieved and the time recorded. The amount of time required for the system to respond to 95% of the final stable value was recorded. This procedure was repeated for high level calibration gas. The time is recorded for the upscale test and the downscale test for each analyzer. The response time for NOx and O2 will be < 15 minutes.

2.0 Test Data

This section contains the test result calculation and field data for the calibration error, linearity error and cycle time tests.

2.1 7 Day Calibration Error Test Data

The following pages contain the test results and field data for the calibration error test. All test results are in accordance with the methods as outlined in 40 CFR 75, Appendix A, Section 6.3.1.

ORIS Code: 666 Facility: KENNEDY State: FL
Unit/Stack ID: 7 Comp/Sys ID: 212/101 Parameter: NOX
Test End Date/Hour: 05/30/2006 09 Test No.: 1 Component Type: NOXA
Calculated Results: Pass Span Scale: High Reason for Test: R
Reported Results: Pass
Performance Spec: CE <= 2.5% of span or |R-A| <= 5 ppm

Date	Hour	Gas Level	Span Value	Reference Value	Measured Value	Ref. Value as % of Span	Reported Result	Reported APS	Recalculated Result	Recalculated APS
060522	13	H	200.000	177.300	176.700	88.7%	0.3	0	0.3	0
060522	13	Z	200.000	0.000	0.000	0.0%	0.0	0	0.0	0
060523	12	H	200.000	177.300	176.500	88.7%	0.4	0	0.4	0
060523	12	Z	200.000	0.000	0.000	0.0%	0.0	0	0.0	0
060524	13	Z	200.000	0.000	0.000	0.0%	0.0	0	0.0	0
060524	14	H	200.000	177.300	176.800	88.7%	0.3	0	0.3	0
060525	12	H	200.000	177.300	176.700	88.7%	0.3	0	0.3	0
060525	12	Z	200.000	0.000	0.000	0.0%	0.0	0	0.0	0
060527	15	H	200.000	177.300	176.900	88.7%	0.2	0	0.2	0
060527	15	Z	200.000	0.000	0.000	0.0%	0.0	0	0.0	0
060529	11	H	200.000	177.300	176.100	88.7%	0.6	0	0.6	0
060529	11	Z	200.000	0.000	0.000	0.0%	0.0	0	0.0	0
060530	09	H	200.000	177.300	175.800	88.7%	0.8	0	0.8	0
060530	09	Z	200.000	0.000	0.000	0.0%	0.0	0	0.0	0

2.2 Linearity Check Test Data

The following pages contain the test results and the field data for the linearity error test. All results are in accordance with the methods as outlined in 40 CFR 75, Appendix A, Section 6.2.

ORIS Code:	666	Facility:	KENNEDY	State:	FL
Unit/Stack ID:	7	Comp/Sys ID:	212/101	Parameter:	NOX
Test End Date/Time:	06/01/2006 1008	Test No.:	1	Component Type:	NOXA
Performance Spec:	LE <= 5.0% or | R - A | <= 5 ppm				
Recalc.:	Pass-APS	Highest |R-A|:	4.1	Scale:	High
Reported Results:	Pass-APS	Highest |R-A|:	4.1	Reason for Test:	RQ

Date	Time	Gas Level	Span Value	Reference Value	Measured Value	Indicator of Aborted Test	Ref. Value as % of Span
060601	0601	L	200.000	54.000	50.500		27.0%
060601	0603	M	200.000	107.600	106.200		53.8%
060601	0605	H	200.000	177.300	176.600		88.7%
060601	0939	L	200.000	54.000	49.500		27.0%
060601	0942	M	200.000	107.600	104.000		53.8%
060601	0945	H	200.000	177.300	173.100		88.7%
060601	1002	L	200.000	54.000	49.600		27.0%
060601	1005	M	200.000	107.600	104.200		53.8%
060601	1008	H	200.000	177.300	173.400		88.7%

Summary Statistics	Reported	Recalculated
High - Reference Value:	177.300	177.300
High - Mean CEM Value:	174.367	174.367
High - Alt. Perf. Flag:	0	0
High - Results:	1.7	1.7
Low - Reference Value:	54.000	54.000
Low - Mean CEM Value:	49.867	49.867
Low - Alt. Perf. Flag:	1	1
Low - Results:	4.1	4.1
Mid - Reference Value:	107.600	107.600
Mid - Mean CEM Value:	104.800	104.800
Mid - Alt. Perf. Flag:	0	0
Mid - Results:	2.6	2.6

2.3 Cycle Time Test Data

The following pages contain the test results and field data for the cycle time test. All results are in accordance with the methods as outlined in 40 CFR 75, Appendix A, Section 6.4.

ORIS Code:	666	Facility:	KENNEDY	State:	FL
Unit/Stack ID:	7	System ID:	101	Parameter:	NOX
Test End Date/Time:	06/22/2006 1301	Test No.:	1	Reason for Test:	R
Calculated Result:	Pass	System Time:	3		
Reported Result:	Pass	System Time:	3		

Date	Start Time	End Time	Component ID	Component Type	Gas Level	Calibration Gas Value	Reported Cycle Time	Calculated Cycle Time	Stable Starting Monitor Value	Stable Ending Monitor Value
060622	1244	1245	002	O2D	H	21.140	1	1	21.140	13.850
060622	1249	1250	002	O2D	Z	0.000	1	1	0.070	13.660
060622	1253	1255	212	NOXA	H	177.900	2	2	178.100	8.900
060622	1259	1301	212	NOXA	Z	0.000	2	2	1.500	8.900

ORIS Code: 666 Facility: KENNEDY State: FL
Unit/Stack ID: 7 System ID: 101 Parameter: NOX
Test End Date/Time: 06/22/2006 1311 Test No.: 2 Reason for Test: R
Calculated Result: Pass System Time: 3
Reported Result: Pass System Time: 3

Date	Start Time	End Time	Component ID	Component Type	Gas Level	Calibration Gas Value	Reported Cycle Time	Calculated Cycle Time	Stable Starting Monitor Value	Stable Ending Monitor Value
060622	1244	1245	002	O2D	H	21.140	1	1	21.140	13.850
060622	1249	1250	002	O2D	Z	0.000	1	1	0.070	13.660
060622	1304	1305	212	NOXA	H	17.800	1	1	17.800	8.000
060622	1308	1311	212	NOXA	Z	0.000	3	3	0.100	7.800

3.0 Calibration Gas Certification Sheets

O2 Linearity Low Gas

Liquid Technology Corporation 8-12-05

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	JEA - Brandy Branch Generating Station (Jacksonville, Fla)
Date	July 25, 2005
Delivery Receipt	DR-15456
Gas Standard	5.00 - 7.50% Oxygen/Nitrogen - EPA PROTOCOL
Final Analysis Date	July 25, 2005
Expiration Date	July 25, 2008
Component	Oxygen
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Oxygen: 6.31% +/- 0.06%

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-115999	CC-166423
Concentration:	4.92% Oxygen/Nitrogen	10.1% Oxygen/Nitrogen
Expiration Date:	April 01, 2007	June 03, 2007

Certification Instrumentation

Component:	Oxygen
Make/Model:	Servomex 244a
Serial Number:	1847
Principal of Measurement:	Paramagnetic
Last Calibration:	July 05, 2005

Cylinder Data

Cylinder Serial Number:	CC-117884	Cylinder Outlet:	CGA 590
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F
Expiration Date:	July 25, 2008		

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Dave Kaprise

Date: July 25, 2005

Unmatched Excellence

2564 Pemberton Drive - Apopka, Florida 32703 - Phone (407)-292-2990

Fax (407)-292-3313

O_2 K-7
4-19-06

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	JEA - Brandy Branch Generating Station (Jacksonville, Fla)
Date	July 25, 2005
Delivery Receipt	DR-15456
Gas Standard	20.0 - 25.0% Oxygen/Nitrogen - EPA PROTOCOL
Final Analysis Date	July 25, 2005
Expiration Date	July 25, 2008

Component	Oxygen
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Oxygen: 21.14% +/- 0.21%

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-184208	CC-85469
Concentration:	21.04% Oxygen/Nitrogen	24.90% Oxygen/Nitrogen
Expiration Date:	March 10, 2009	August 09, 2008

Certification Instrumentation

Component:	Oxygen
Make/Model:	Servomex 244a
Serial Number:	1847
Principal of Measurement:	Paramagnetic
Last Calibration:	July 05, 2005

Cylinder Data

Cylinder Serial Number:	CC-129043	Cylinder Outlet:	CGA 590
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F
Expiration Date:	July 25, 2008		

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Dave Kaprise

Date: July 25, 2005

Unmatched Excellence

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Fax (407)-292-3313

NEW NO/NOx LINEARITY MID RANGE 8-12-05

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	JEA - Brandy Branch Generating Station (Jacksonville, Fla)
Date	July 12, 2005
Delivery Receipt	DR-15401
Gas Standard	100.0 - 120.0 ppm Nitric Oxide/Nitrogen - EPA PROTOCOL
Final Analysis Date	July 12, 2005
Expiration Date	July 12, 2007
Component	Nitric Oxide
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Nitric Oxide: 107.6 ppm +/- 1.0 ppm

Nitrogen: Balance

Total Oxides of Nitrogen: 107.6 ppm

** Total NOX for Reference Use Only **

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-117925	CC-129028
Concentration:	55.67 ppm NO/Nitrogen	169.8 ppm NO/Nitrogen
Expiration Date:	March 23, 2008	October 05, 2008

Certification Instrumentation

Component:	Nitric Oxide
Make/Model:	Nicolet-NEXUS 470
Serial Number:	AEP99000154
Principal of Measurement:	FTIR
Last Calibration:	July 08, 2005

Cylinder Data

Cylinder Serial Number:	CC-56577	Cylinder Outlet:	CGA 660
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70'F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Jeremy Braun

Date: July 12, 2005

Unmatched Excellence

2564 Pemberton Drive - Apopka, Florida 32703 - Phone (407)-292-2990
Fax (407)-292-3313

BEST AVAILABLE COPY

New NOx Low Range Linearity

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

8-12-05

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	JEA - Brandy Branch Generating Station (Jacksonville, Fla)
Date	February 09, 2005
Delivery Receipt	DR-14564
Gas Standard	55.0 ppm Nitric Oxide/Nitrogen - EPA PROTOCOL
Final Analysis Date	February 09, 2005
Expiration Date	February 09, 2007
Component	Nitric Oxide
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psi**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Nitric Oxide: 54.0 ppm +/- 0.5 ppm

Nitrogen: Balance

Total Oxides of Nitrogen: 54.0 ppm

** Total NOX for Reference Use Only **

Reference Standards:

SRM/GMIS:	GMIS
Cylinder Number:	CC-117925
Concentration:	55.67 ppm NO/Nitrogen
Expiration Date:	March 23, 2008

Certification Instrumentation

Component:	Nitric Oxide
Make/Model:	Nicolet-NEXUS 470
Serial Number:	AEP99000154
Principal of Measurement:	FTIR
Last Calibration:	February 09, 2005

Cylinder Data

Cylinder Serial Number:	CC-82624	Cylinder Outlet:	CGA 660
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Dave Kaspar

Date: February 09, 2005

Unmatched Excellence

2564 Pemberton Drive - Apopka, Florida 32703 - Phone (407)-292-2990
Fax (407)-292-3313

Hi No K-7
5-15-06

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	JEA - Brandy Branch Generating Station (Jacksonville, Fla)
Date	July 12, 2005
Delivery Receipt	DR-15401
Gas Standard	160.0 - 200.0 ppm Nitric Oxide/Nitrogen - EPA PROTOCOL
Final Analysis Date	July 12, 2005
Expiration Date	July 12, 2007

Component	Nitric Oxide
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Nitric Oxide: 177.3 ppm +/- 1.7 ppm

Nitrogen: Balance

Total Oxides of Nitrogen: 178.3 ppm

** Total NOX for Reference Use Only **

Reference Standards:

SRM/GMIS:	GMIS
Cylinder Number:	CC-128944
Concentration:	174.5 ppm NO/Nitrogen
Expiration Date:	October 05, 2008

Certification Instrumentation

Component:	Nitric Oxide
Make/Model:	Nicolet-NEXUS 470
Serial Number:	AEP99000154
Principal of Measurement:	FTIR
Last Calibration:	July 08, 2005

Cylinder Data

Cylinder Serial Number:	CC-159002	Cylinder Outlet:	CGA 660
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70'F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Jeremy Braun

Date: July 12, 2005

Unmatched Excellence

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Fax (407)-292-3313

NEW ~~HC/NO~~ LINEARITY MID RANGE 8-12-05

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	JEA - Brandy Branch Generating Station (Jacksonville, Fla)
Date	July 25, 2005
Delivery Receipt	DR-15456
Gas Standard	12.0 - 15.0% Oxygen/Nitrogen - EPA PROTOCOL
Final Analysis Date	July 25, 2005
Expiration Date	July 25, 2008
Component	Oxygen
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Oxygen: 13.61% +/- 0.13%

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS	GMIS
Cylinder Number:	CC-166423	CC-184208
Concentration:	10.1% Oxygen/Nitrogen	21.04% Oxygen/Nitrogen
Expiration Date:	June 03, 2007	March 10, 2009

Certification Instrumentation

Component:	Oxygen
Make/Model:	Servomex 244a
Serial Number:	1847
Principal of Measurement:	Paramagnetic
Last Calibration:	July 05, 2005

Cylinder Data

Cylinder Serial Number:	CC-185206	Cylinder Outlet:	CGA 590
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70 F
Expiration Date:	July 25, 2008		

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by: Dave Kagnise

Date: July 25, 2005

Unmatched Excellence

2564 Pemberton Drive - Apopka, Florida 32703 - Phone (407)-292-2990
Fax (407)-292-3313

4.0 RATA Report

ORIS Code: 666 Facility: KENNEDY State: FL
Unit/Stack ID: 7 System ID: 101 Parameter: NOX
Test End Date/Time: 07/31/2006 1732 Test No.: 1 # of Op. Levels: 1 Units of Measure: LB/MMBTU
Reason for Test: R
Performance Spec: <= 10.0% Next RATA: Four Op Qtrs
Recalc. Results: Pass % RA: 1.71 Mean Diff: 0.000 BAF: 1.000
Reported Results: Pass % RA: 1.71 Mean Diff: 0.000 BAF: 1.000

Operating Level: H

Run	Start Date	Start Time	End Date	End Time	Run Status	Reference Method	Monitoring Value	Gross Load or Velocity
1	07/31/2006	1330	07/31/2006	1350	1	0.032	0.033	150
2	07/31/2006	1356	07/31/2006	1416	1	0.034	0.034	155
3	07/31/2006	1422	07/31/2006	1442	1	0.034	0.033	158
4	07/31/2006	1454	07/31/2006	1514	1	0.033	0.033	158
5	07/31/2006	1520	07/31/2006	1540	1	0.033	0.033	158
6	07/31/2006	1546	07/31/2006	1606	1	0.034	0.033	158
7	07/31/2006	1616	07/31/2006	1636	1	0.034	0.034	157
8	07/31/2006	1642	07/31/2006	1702	1	0.034	0.034	157
9	07/31/2006	1712	07/31/2006	1732	1	0.033	0.033	156

Summary Statistics	Reported	Recalculated
Mean of Monitoring System	0.033	0.033
Mean of Reference Method Values	0.033	0.033
Mean of Difference	0.000	0.000
Standard Deviation of Difference	0.001	0.001
Confidence Coefficient	0.000	0.000
T-Value	2.306	2.306
Relative Accuracy:	1.71	1.71
Bias Adjustment Factor	1.000	1.000
APS Flag	0	0
Indicator of Normal Op. Level	N	N
Gross Unit Load or Velocity	156	156
Reference Method Used	7E,3A	

COASTAL AIR CONSULTING INC.

1531 Wyngate Drive DeLand, FL 32724
Phone (386) 943 9241 / Cell (386) 451-0169 / Fax (386) 943 9212

COMPLETE EMISSIONS TESTING SERVICES • PERMITTING ASSISTANCE • CEMS CERTIFICATION • AMBIENT AIR MONITORING

Emissions Test Report

No. 146-005

JACKSONVILLE ELECTRIC AUTHORITY
KENNEDY GENERATING STATION
COMBUSTION TURBINE KCT-7

ANNUAL CARBON MONOXIDE COMPLIANCE TEST, RELATIVE ACCURACY TEST AUDIT (RATA) on NO_x & O_2 CEMS and VISIBLE EMISSIONS EVALUATION

Prepared for:

JEA
4215 Talleyrand Avenue
Jacksonville, FL 32206

Prepared by:

Coastal Air Consulting, Inc.
1531 Wyngate Dr.
DeLand, FL 32724
(386) 943-9241

July, 31 2006

STATEMENT OF VALIDITY

All testing activities and results represented herein were conducted and obtained in accordance with the approved EPA protocols listed in 40 CFR Parts 60 & 75. The contents have been reviewed and verified to be true and correct.

Stephen C. Webb

Stephen C. Webb

President
Coastal Air Consulting, Inc.
1531 Wyngate Dr.
DeLand, FL 32724
(386) 943-9241

EXECUTIVE SUMMARY

On July 31, 2006, Coastal Air Consulting, Inc. conducted the Annual Compliance Test for Carbon Monoxide emissions and Relative Accuracy Test Audits on the NOx and O_2 continuous emission monitors at the JEA Kennedy Generating Station Combustion Turbine KCT-7. This testing was performed in order to satisfy specific testing requirements in the facilities permit as well as the requirements of 40 CFR Part 75 for CEMS operation.

The results are summarized in the table below:

JEA KCT-7 COMPLIANCE

PARAMETERS	TEST RESULTS	ALLOWABLE
Carbon Monoxide	0.24 ppm @ 15% O_2	15 PPM @ 15% O_2
Visible Emissions	0.00%	10% Opacity

JEA KCT-7 RATA

PARAMETERS	TEST RESULTS	ALLOWABLE ANNUAL	BIAS ADJUSTMENT
NOx (PPM)	1.632%	7.5%	NB
NOx (LB/MMBTU)	1.713%	7.5%	NB
O_2 (%)	1.027%	7.5%	NA

The turbine was operating at base load and firing with natural gas during all testing. The test results demonstrated compliance at the time of testing with the applicable standards.

PROJECT STATISTICS

Client:	Jacksonville Electric Authority	
Facility:	Kennedy Generating Station KCT-7	
Location:	4215 Talleyrand Avenue Jacksonville, FL 32206	
Type of Process Tested:	170MW Simple Cycle Combustion Turbine	
Test Protocols Performed:	Oxygen/Carbon Dioxide-EPA Method 3A Nitrogen Oxide-EPA Method 7E Visible Emissions-EPA Method 9 Carbon Monoxide-EPA Method 10	
Source Analyzers:	Thermo Environmental NOx – 42C Servomex O_2 – 1400	
Testing Firm:	Coastal Air Consulting, Inc. 1531 Wyngate Dr. DeLand, FL 32724	
Test Personnel:	Steve Webb Donny Leeper Sean Webb	Site Supervisor Technician Technician
Test Date:	July 31, 2006	
Client Representative:	Joseph Werner	
Observers:	William Coffman	City of Jacksonville Air & Water Quality Division

TABLE OF CONTENTS

1.0 Introduction

Coastal Air Consulting, Inc. (Coastal) was contracted by JEA to perform the annual compliance for Carbon Monoxide and determine the relative accuracy of the Continuous Emissions Monitoring System (CEMS) at the Kennedy Generating Station KCT-7 in Jacksonville, Florida.

The sampling program was conducted on July 31, 2006. The annual compliance and RATA was performed by Coastal personnel, with the assistance of personnel assigned by JEA.

2.0 Test Program Summary

A summary of test results developed by this source sampling program is presented in Tables 1-3.

TABLE 1
Relative Accuracy Summary

PARAMETERS	RELATIVE ACCURACY %	BIAS
NOx (ppm)	1.632	NB
NOx (lb/mmBtu)	1.713	NB
O_2 (%)	1.027	NA

TABLE 2
CO Compliance

RUN #	LOAD (MW)	CO ppmvd @ 15% O_2	Allowable CO ppmvd @ 15% O_2
1	154	0.11	15
2	158	0.28	15
3	157	0.34	15
Avg.	156	0.24	15

TABLE 3
OPACITY

Fuel	Opacity %	Allowable %
Gas	0.0	10

3.0 Results of Testing

These results indicate that KCT-7 was in compliance and passed the RATA at the time of testing under normal operating conditions.

4.0 Description of Source

Kennedy Generating Station Unit KCT-7 is a nominal 170 mega-watt General Electric PG 7241 FA simple cycle combustion turbine. The maximum heat input rates, based on the lower heating value (LHV) of fuel at ambient conditions of 59 ^{0}F, 60% RH and 100% load shall not exceed 1,623 mmBtu/hr while firing natural gas

The flue gas is exhausted through a stack approximately 90 foot, above grade with 4 test ports located at the sampling platform approximately 70 feet above grade. The inside stack diameter is 18 feet at the test location A schematic of the process and stack sampling location is included in Appendix 4 "Figures".

5.0 Sampling Procedures

EPA testing methods utilized during this test program include the following;

EPA Method 3A	Gas Analysis for CO_2, O_2, Excess Air and Dry Molecular Weight (Instrumental Analyzer Method)
EPA Method 7E	Determination of Nitrogen Oxides Emissions From Stationary Sources (Instrumental Analyzer Method)
EPA Method 9	Visual Determination of The Opacity of Emissions From Stationary Sources
EPA Method 10	Determination of Carbon Monoxide Emissions From Stationary Sources

An O_2 traverse was performed prior to the compliance and RATA testing, no stratification was found.

The RATA testing for NOx and O_2 was conducted concurrent with the CO compliance testing. Three NOx RATA runs were extracted from each compliance test run. The system bias and drift checks were performed before and after each 21 minute RATA run. An air cooled probe was used for sampling the three points during each test run.

6.0 Operating Conditions

JEA personnel monitored operating conditions throughout the duration of the sampling program. The data is included in Appendix 5 "Plant Data".

7.0 Quality Assurance Procedures

Quality assurance procedures followed during these testing activities were applied consistent with the requirements outlined by the EPA methods referenced in 40 CFR Parts 60 & 75. Analyzer calibrations, system bias and drift checks were completed before and after each sample run utilizing EPA Protocol 1 calibration gases.

APPENDIX 1
REFERENCE DATA
COMPLIANCE

JD KENNEDY GENERATING STATION
KCT 7

LOAD:	**154 MW**
FUEL:	**100 % GAS**
DATE:	**7/31/2006**
RUN:	**1**
WET BULB:	**79 °F**
DRY BULB:	**92 °F**
RH:	**55%**

AVG. ADJUSTED CO ppmvd @ 15% O2	**0.11**
CORRECTED O2 %	**13.70**
CORRECTED CO ppmvd	**0.13**
CO LB/MBTU	**0.0002**

ANALYZER RESPONSE, SYSTEM BIAS AND SYSTEM DRIFT DATA

SPAN SETTING	CAL GASES	TANK VALUE	ANALYZER RESPONSE VALUE	DIFFERENCE PPM	% SPAN	SYSTEM BIAS VALUE	% SPAN	SYSTEM BIAS VALUE	% SPAN	% DRIFT	ANALYZER SERIAL #
		0.00	0.10	0.10	0.40	0.10	0.00	0.10	0.00	0.00	
25	PPM NOx	11.60	11.60	0.00	0.00	11.70	0.40	11.50	-0.40	-0.80	42CHL72772-372
		21.10	20.90	-0.20	-0.80						
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25	% O2	12.50	12.50	0.00	0.00	12.50	0.00	12.50	0.00	0.00	01420B153
		22.50	22.50	0.00	0.00						
		0.0	0.00	0.00	0.0	0.00	0.0	0.00	0.0	0.0	
50	PPM CO	15.90	16.00	0.10	0.2	15.90	-0.2	15.80	-0.4	-0.2	48C68845-361
		30.40	30.50	0.10	0.2						

UNCORRECTED REFERENCE DATA

DATE TIME	O2 %	CO PPM	DATE TIME	O2 %	CO PPM
7/31/2006 13:30	13.66	0.53	7/31/2006 14:06	13.72	0.23
7/31/2006 13:31	13.68	0.13	7/31/2006 14:07	13.72	0.15
7/31/2006 13:32	13.68	0.08	7/31/2006 14:08	13.72	0.13
7/31/2006 13:33	13.69	0.10	7/31/2006 14:09	13.72	0.25
7/31/2006 13:34	13.69	0.08	7/31/2006 14:10	13.72	0.20
7/31/2006 13:35	13.69	0.00	7/31/2006 14:11	13.72	0.15
7/31/2006 13:36	13.70	0.15	7/31/2006 14:12	13.72	0.18
7/31/2006 13:37	13.70	0.10	7/31/2006 14:13	13.72	0.18
7/31/2006 13:38	13.70	0.05	7/31/2006 14:14	13.72	0.15
7/31/2006 13:39	13.71	0.00	7/31/2006 14:15	13.71	0.13
7/31/2006 13:40	13.71	0.18	7/31/2006 14:16	13.71	0.13
7/31/2006 13:41	13.71	0.20	7/31/2006 14:22	13.68	0.03
7/31/2006 13:42	13.70	0.15	7/31/2006 14:23	13.69	0.18
7/31/2006 13:43	13.70	0.20	7/31/2006 14:24	13.68	0.12
7/31/2006 13:44	13.71	0.08	7/31/2006 14:25	13.68	0.15
7/31/2006 13:45	13.70	0.05	7/31/2006 14:26	13.69	0.15
7/31/2006 13:46	13.70	0.03	7/31/2006 14:27	13.69	0.20
7/31/2006 13:47	13.70	0.18	7/31/2006 14:28	13.69	0.00
7/31/2006 13:48	13.69	0.08	7/31/2006 14:29	13.69	0.13
7/31/2006 13:49	13.70	0.03	7/31/2006 14:30	13.69	0.18
7/31/2006 13:50	13.69	0.00	7/31/2006 14:31	13.69	0.00
7/31/2006 13:56	13.73	0.00	7/31/2006 14:32	13.69	0.15
7/31/2006 13:57	13.73	0.00	7/31/2006 14:33	13.69	0.15
7/31/2006 13:58	13.73	0.00	7/31/2006 14:34	13.69	0.00
7/31/2006 13:59	13.73	0.18	7/31/2006 14:35	13.69	0.00
7/31/2006 14:00	13.73	0.13	7/31/2006 14:36	13.69	0.10
7/31/2006 14:01	13.73	0.20	7/31/2006 14:37	13.69	0.15
7/31/2006 14:02	13.73	0.20	7/31/2006 14:38	13.69	0.13
7/31/2006 14:03	13.73	0.23	7/31/2006 14:39	13.68	0.25
7/31/2006 14:04	13.73	0.10	7/31/2006 14:40	13.68	0.25
7/31/2006 14:05	13.73	0.20			

* Resumed after RATA calibrations

MEAN ANALYZER VALUES

		% O2	13.70
F Factor	**8710**	Avg. CO ppmvd	0.13

JD KENNEDY GENERATING STATION
KCT 7

LOAD:	**158 MW**
FUEL:	**100 % GAS**
DATE:	**7/31/2006**
RUN:	**2**
WET BULB:	**76 °F**
DRY BULB:	**83 °F**
RH:	**72%**

AVG ADJUSTED CO ppmvd @ 15% O2	0.28
CORRECTED O2 %	13.57
CORRECTED CO ppmvd	0.35
CO LB/MBTU	0.0006

ANALYZER RESPONSE, SYSTEM BIAS AND SYSTEM DRIFT DATA

SPAN SETTING	CAL GASES	TANK VALUE	ANALYZER RESPONSE VALUE	DIFFERENCE PPM	% SPAN	SYSTEM BIAS VALUE	% SPAN	SYSTEM BIAS VALUE	% SPAN	% DRIFT	ANALYZER SERIAL #
		0.00	0.10	0.10	0.40	0.10	0.00	0.00	-0.40	-0.40	
25	PPM NOx	11.60	11.60	0.00	0.00	11.50	-0.40	11.60	0.00	0.40	42CHL72772-372
		21.10	20.90	-0.20	-0.80						
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25	% O2	12.50	12.50	0.00	0.00	12.50	0.00	12.50	0.00	0.00	01420B153
		22.50	22.50	0.00	0.00						
		0.0	0.00	0.00	0.0	0.00	0.0	0.00	0.0	0.0	
50	PPM CO	15.90	16.00	0.10	0.2	15.80	-0.4	15.70	-0.6	-0.2	48C68845-361
		30.40	30.50	0.10	0.2						

UNCORRECTED REFERENCE DATA

DATE TIME	O2 %	CO PPM	DATE TIME	O2 %	CO PPM
7/31/2006 14:54	13.53	0.25	7/31/2006 15:30	13.55	0.38
7/31/2006 14:55	13.54	0.28	7/31/2006 15:31	13.55	0.43
7/31/2006 14:56	13.54	0.30	7/31/2006 15:32	13.54	0.48
7/31/2006 14:57	13.54	0.28	7/31/2006 15:33	13.55	0.43
7/31/2006 14:58	13.54	0.20	7/31/2006 15:34	13.55	0.43
7/31/2006 14:59	13.55	0.30	7/31/2006 15:35	13.54	0.35
7/31/2006 15:00	13.55	0.28	7/31/2006 15:36	13.54	0.38
7/31/2006 15:01	13.55	0.30	7/31/2006 15:37	13.54	0.45
7/31/2006 15:02	13.55	0.25	7/31/2006 15:38	13.54	0.33
7/31/2006 15:03	13.56	0.40	7/31/2006 15:39	13.55	0.20
7/31/2006 15:04	13.56	0.35	7/31/2006 15:40	13.55	0.25
7/31/2006 15:05	13.56	0.43	7/31/2006 15:46	13.61	0.35
7/31/2006 15:06	13.56	0.38	7/31/2006 15:47	13.61	0.30
7/31/2006 15:07	13.56	0.30	7/31/2006 15:48	13.61	0.38
7/31/2006 15:08	13.56	0.30	7/31/2006 15:49	13.61	0.53
7/31/2006 15:09	13.56	0.25	7/31/2006 15:50	13.61	0.48
7/31/2006 15:10	13.56	0.40	7/31/2006 15:51	13.60	0.35
7/31/2006 15:11	13.58	0.30	7/31/2006 15:52	13.61	0.45
7/31/2006 15:12	13.55	0.13	7/31/2006 15:53	13.61	0.43
7/31/2006 15:13	13.55	0.38	7/31/2006 15:54	13.61	0.43
7/31/2006 15:14	13.55	0.40	7/31/2006 15:55	13.61	0.43
7/31/2006 15:20	13.56	0.30	7/31/2006 15:56	13.61	0.40
7/31/2006 15:21	13.55	0.82	7/31/2006 15:57	13.61	0.38
7/31/2006 15:22	13.55	0.00	7/31/2006 15:58	13.61	0.50
7/31/2006 15:23	13.54	0.05	7/31/2006 15:59	13.61	0.53
7/31/2006 15:24	13.54	0.10	7/31/2006 16:00	13.61	0.35
7/31/2006 15:25	13.55	0.40	7/31/2006 16:01	13.61	0.40
7/31/2006 15:26	13.55	0.45	7/31/2006 16:02	13.61	0.35
7/31/2006 15:27	13.55	0.33	7/31/2006 16:03	13.61	0.30
7/31/2006 15:28	13.55	0.00	7/31/2006 16:04	13.61	0.33
7/31/2006 15:29	13.55	0.40			

* Resumed after RATA calibrations

MEAN ANALYZER VALUES

		% O2	13.57
F Factor	**8710**	Avg. CO ppmvd	0.35

JD KENNEDY GENERATING STATION
KCT 7

LOAD:	**157 MW**
FUEL:	**100 % GAS**
DATE:	**7/31/2006**
RUN:	**3**
WET BULB:	**76 °F**
DRY BULB:	**86 °F**
RH:	**62%**

Avg ADJUSTED CO ppmvd @ 15% O2	0.34
CORRECTED O2 %	13.68
CORRECTED CO ppmvd	0.42
CO LB/MBTU	0.0008

ANALYZER RESPONSE, SYSTEM BIAS AND SYSTEM DRIFT DATA

SPAN SETTING	CAL GASES	TANK VALUE	ANALYZER RESPONSE VALUE	DIFFERENCE PPM	% SPAN	SYSTEM BIAS VALUE	% SPAN	SYSTEM BIAS VALUE	% SPAN	% DRIFT	ANALYZER SERIAL #
		0.00	0.10	0.10	0.40	0.00	-0.40	0.00	-0.40	0.00	
25	PPM NOx	11.60	11.60	0.00	0.00	11.60	0.00	11.60	0.00	0.00	42CHL72772-372
		21.10	20.90	-0.20	-0.80						
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25	% O2	12.50	12.50	0.00	0.00	12.50	0.00	12.50	0.00	0.00	01420B153
		22.50	22.50	0.00	0.00						
		0.0	0.00	0.00	0.0	0.00	0.0	0.00	0.0	0.0	
50	PPM CO	15.90	16.00	0.10	0.2	15.70	-0.6	15.60	-0.8	-0.2	48C68845-361
		30.40	30.50	0.10	0.2						

UNCORRECTED REFERENCE DATA

DATE TIME	O2 %	CO PPM	DATE TIME	O2 %	CO PPM
7/31/2006 16:16	13.68	0.25	7/31/2006 16:52	13.68	0.35
7/31/2006 16:17	13.68	0.45	7/31/2006 16:53	13.68	0.45
7/31/2006 16:18	13.68	0.38	7/31/2006 16:54	13.68	0.48
7/31/2006 16:19	13.68	0.38	7/31/2006 16:55	13.68	0.43
7/31/2006 16:20	13.68	0.48	7/31/2006 16:56	13.68	0.48
7/31/2006 16:21	13.69	0.45	7/31/2006 16:57	13.68	0.43
7/31/2006 16:22	13.68	0.40	7/31/2006 16:58	13.68	0.45
7/31/2006 16:23	13.68	0.43	7/31/2006 16:59	13.68	0.43
7/31/2006 16:24	13.69	0.38	7/31/2006 17:00	13.68	0.38
7/31/2006 16:25	13.69	0.35	7/31/2006 17:01	13.68	0.43
7/31/2006 16:26	13.69	0.43	7/31/2006 17:02	13.69	0.35
7/31/2006 16:27	13.69	0.30	* 7/31/2006 17:12	13.66	0.50
7/31/2006 16:28	13.69	0.35	7/31/2006 17:13	13.66	0.43
7/31/2006 16:29	13.69	0.43	7/31/2006 17:14	13.66	0.48
7/31/2006 16:30	13.69	0.38	7/31/2006 17:15	13.67	0.45
7/31/2006 16:31	13.69	0.45	7/31/2006 17:16	13.67	0.48
7/31/2006 16:32	13.68	0.38	7/31/2006 17:17	13.67	0.45
7/31/2006 16:33	13.69	0.43	7/31/2006 17:18	13.67	0.25
7/31/2006 16:34	13.68	0.48	7/31/2006 17:19	13.65	0.40
7/31/2006 16:35	13.68	0.43	7/31/2006 17:20	13.68	0.45
7/31/2006 16:36	13.69	0.45	7/31/2006 17:21	13.68	0.45
* 7/31/2006 16:42	13.67	0.48	7/31/2006 17:22	13.68	0.43
7/31/2006 16:43	13.68	0.50	7/31/2006 17:23	13.68	0.38
7/31/2006 16:44	13.68	0.40	7/31/2006 17:24	13.68	0.38
7/31/2006 16:45	13.68	0.40	7/31/2006 17:25	13.68	0.45
7/31/2006 16:46	13.68	0.48	7/31/2006 17:26	13.68	0.45
7/31/2006 16:47	13.68	0.43	7/31/2006 17:27	13.68	0.38
7/31/2006 16:48	13.68	0.35	7/31/2006 17:28	13.68	0.43
7/31/2006 16:49	13.68	0.43	7/31/2006 17:29	13.68	0.33
7/31/2006 16:50	13.68	0.43	7/31/2006 17:30	13.68	0.43
7/31/2006 16:51	13.68	0.25			

* Resumed after RATA calibrations

MEAN ANALYZER VALUES

		% O2	13.68
F Factor	**8710**	Avg. CO ppmvd	0.41

EPA

VISIBLE EMISSION OBSERVATION FORM 1

Form Number | Page 1 of 1

Continued on VEO Form Number

Method Used (Circle One): Method 9 | 203A | 203B | Other: _____

Company Name: JEA

Facility Name: Kennedy Station

Street Address: 4215 Talleyrand Ave

City: Jacksonville | State: FL | Zip: 32206

Process: Gas Turbine | Unit #: | Operating Mode: SPD

Control Equipment: N/A | Operating Mode: N/A

Describe Emission Point: ~100" Circular Stack

Height of Emiss. Pt. Start: ~90' End: | Height of Emiss. Pt. Rel. to Observer Start: ~70' End:

Distance to Emiss. Pt. Start: ~350' End: | Direction to Emiss. Pt. (Degrees) Start: 45° End:

Vertical Angle to Obs. Pt. Start: 12° End: | Direction to Obs. Pt. (Degrees) Start: 45° End:

Distance and Direction to Observation Point from Emission Point Start: End:

Describe Emissions Start: Steam End:

Emission Color Start: None End: | Water Droplet Plume: Attached ☐ Detached ☐ None ☒

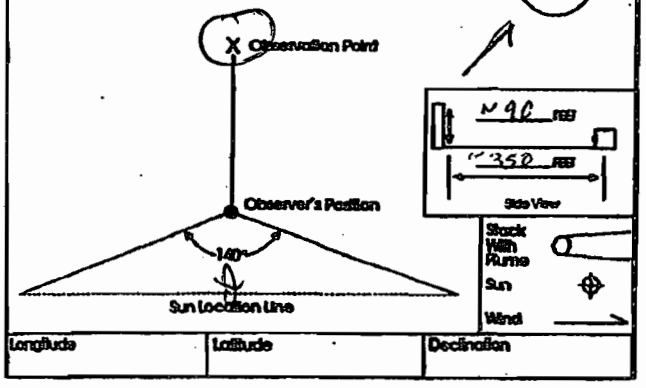
Describe Plume Background Start: Sky End:

Background Color Start: White End: dark gray | Sky Conditions Start: 75 % End: Overcast

Wind Speed Start: Calm End: 20-25 | Wind Direction Start: Calm End: NW

Ambient Temp. Start: End: | Wet Bulb Temp. | RH Percent

Source Layout Sketch — Draw North Arrow: ☐ RN ☒ MN



Longitude | Latitude | Declination

Additional Information: Thunderstorm coming in @ 1415
No rain during VE, just wind

OBSERVATION DATE 7-31-06				START TIME 1330 EST				STOP TIME 1430	
SEC / MIN	0	15	30	45	MIN / SEC	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	0	0	0	0
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

AVERAGE OPACITY FOR HIGHEST PERIOD: 0 % | NUMBER OF READINGS ABOVE 20 % WERE: 0

RANGE OF OPACITY READINGS: MINIMUM 0 MAXIMUM 0

OBSERVER'S NAME (PRINT): Daniel Cooper

OBSERVER'S SIGNATURE: Daniel Cooper | DATE: 7-31-06

ORGANIZATION: AES, Inc.

CERTIFIED BY: CAA | DATE: 5-10-06

VERIFIED BY: | DATE:

O2 Traverse

Plant/City:	JD KENNEDY	Date:	31-Jul-06
Location:	KCT 7	Time:	1210 (EST)
Operators:	SCW/DLL/SPW	Load	BASE

Port #	Traverse Point	Sampling Time (hhmm)	O2 (%)	CO2 (%)	COMMENTS Probe Markings
N	1	1210	13.6	3.9	4.5"
N	2	1213	13.6	3.9	14.5"
N	3	1216	13.6	3.9	25.5"
N	4	1219	13.6	3.9	38.2"
N	5	1222	13.6	3.9	54.0"
N	6	1225	13.6	3.9	76.9"
E	1	1228	13.6	3.9	
E	2	1231	13.6	3.9	
E	3	1234	13.6	3.9	
E	4	1237	13.6	3.9	
E	5	1240	13.6	3.9	
E	6	1243	13.6	3.9	
S	1	1246	13.6	3.9	
S	2	1249	13.6	3.9	
S	3	1252	13.6	3.9	
S	4	1255	13.6	3.9	
S	5	1258	13.6	3.9	
S	6	1301	13.6	3.9	
W	1	1304	13.6	3.9	
W	2	1307	13.6	3.9	
W	3	1310	13.6	3.9	
W	4	1313	13.6	3.9	
W	5	1316	13.6	3.9	
W	6	1319	13.6	3.9	
		Average	13.6	3.9	

REFERENCE DATA
RATA

COASTAL AIR CONSULTING, INC.

NOx PPM @ 15% O2 RELATIVE ACCURACY

PLANT: JD KENNEDY
UNIT: KCT 7
LOAD: 156 MW
DATE: 7/31/2006

ANALYZER: TECO

RUN	TIME START	TIME END	REFERENCE METHOD (PPM)	CEM RESPONSE (PPM)	ARITHMATIC DIFFERENCE	DIFFERENCE SQUARED
1	1330	1350	8.81	8.82	-0.010	0.000100
2	1356	1416	9.22	9.16	0.060	0.003600
3	1422	1442	9.26	9.02	0.240	0.057600
4	1454	1514	9.04	8.95	0.090	0.008100
5	1520	1540	9.05	9.01	0.040	0.001600
6	1546	1606	9.12	9.03	0.090	0.008100
7	1616	1636	9.32	9.11	0.210	0.044100
8	1642	1702	9.12	9.14	-0.020	0.000400
9	1712	1732	9.01	9.05	-0.040	0.001600
			AVERAGE	AVERAGE	SUM OF DIFF.	SUM OF THE SQUARES
			9.106	9.032	0.660	0.125

**MEAN DIFFERENCE, d (Eq. A-7)	0.073333
**STANDARD DEVIATION, Sd (Eq. A-8)	0.097980
**CONFIDENCE COEFFICIENT, |CC| (Eq. A-9)	0.075314
**PERCENT (%) RELATIVE ACCURACY, RA (Eq. A-10)	1.632
**CALCULATED BIAS ADJUSTMENT FACTOR, BAF (Eq. A-12)	1.000

** 40 CFR 75, Appendix A

COASTAL AIR CONSULTING, INC.

NOx LBS/MMBTU RELATIVE ACCURACY

PLANT: JD KENNEDY
UNIT: KCT 7
LOAD: 156 MW
DATE: 7/31/2006

ANALYZER: TECO

RUN	TIME START	TIME END	REFERENCE METHOD (lb/mmBTU)	CEM RESPONSE (lb/mmBTU)	ARITHMATIC DIFFERENCE	DIFFERENCE SQUARED
1	1330	1350	0.032	0.033	-0.001	0.000001
2	1356	1416	0.034	0.034	0.000	0.000000
3	1422	1442	0.034	0.033	0.001	0.000001
4	1454	1514	0.033	0.033	0.000	0.000000
5	1520	1540	0.033	0.033	0.000	0.000000
6	1546	1606	0.034	0.033	0.001	0.000001
7	1616	1636	0.034	0.034	0.000	0.000000
8	1642	1702	0.034	0.034	0.000	0.000000
9	1712	1732	0.033	0.033	0.000	0.000000
			AVERAGE	AVERAGE	SUM OF DIFF.	SUM OF THE SQUARES
			0.033	0.033	0.001	0.000

**MEAN DIFFERENCE, d (Eq. A-7)	0.000111
**STANDARD DEVIATION, Sd (Eq. A-8)	0.000601
**CONFIDENCE COEFFICIENT, |CC| (Eq. A-9)	0.000462
**PERCENT (%) RELATIVE ACCURACY, RA (Eq. A-10)	1.713
OR	
***RELATIVE ACCURACY + or - 0.015 LB/MMBTU OF THE REFERENCE VALUE	0.000
**CALCULATED BIAS ADJUSTMENT FACTOR, BAF (Eq. A-12)	1.000
**APPLIED BIAS ADJUSTMENT FACTOR, BAF (LOW EMITTER)	1.000

** 40 CFR 75, Appendix A
*** 40 CFR 75, Appendix B, 2.3.1.2 (e & f)

COASTAL AIR CONSULTING, INC.

O2 % RELATIVE ACCURACY

PLANT: JD KENNEDY
UNIT: KCT 7
LOAD: 156 MW
DATE: 7/31/2006

ANALYZER: SERVOMEX

RUN	TIME START	TIME END	REFERENCE METHOD (%)	CEM RESPONSE (%)	ARITHMATIC DIFFERENCE	DIFFERENCE SQUARED
1	1330	1350	13.70	13.56	0.140	0.019600
2	1356	1416	13.72	13.59	0.130	0.016900
3	1422	1442	13.69	13.57	0.120	0.014400
4	1454	1514	13.55	13.55	0.000	0.000000
5	1520	1540	13.55	13.55	0.000	0.000000
6	1546	1606	13.61	13.54	0.070	0.004900
7	1616	1636	13.68	13.54	0.140	0.019600
8	1642	1702	13.68	13.55	0.130	0.016900
9	1712	1732	13.67	13.54	0.130	0.016900
			AVERAGE	AVERAGE	SUM OF DIFF.	SUM OF THE SQUARES
			13.650	13.554	0.860	0.109

**MEAN DIFFERENCE, d (Eq. A-7)	0.095556
**STANDARD DEVIATION, Sd (Eq. A-8)	0.058119
**CONFIDENCE COEFFICIENT, |CC| (Eq. A-9)	0.044674
**PERCENT (%) RELATIVE ACCURACY, RA (Eq. A-10)	1.027
**CALCULATED BIAS ADJUSTMENT FACTOR, BAF (Eq. A-12)	NA

** 40 CFR 75, Appendix A

JD KENNEDY GENERATING STATION
KCT 7

07/31/06

CALIBRATION ERROR

SPAN SETTING	CAL GAS	TANK VALUE	ANALYZER VALUE	DIFF PPM	% SPAN	ANALYZER SERIAL #
	ppm NOx	0.00	0.10	0.1	0.4	
25	ppm NOx	11.60	11.60	0.0	0.0	42CHL72772-372
	ppm NOx	21.10	20.90	-0.2	-0.8	
	% O2	0.00	0.00	0.0	0.0	
25	% O2	12.50	12.50	0.0	0.0	01420B153
	% O2	22.50	22.50	0.0	0.0	

Run 1

SYSTEM BIAS AND CALIBRATION DRIFT DATA

GAS UNITS	ANALYZER VALUE	PRETEST CHECK	% SPAN	POSTTEST CHECK	% SPAN	% DRIFT
ppm NOx	0.10	0.10	0.00	0.10	0.00	0.00
ppm NOx	11.60	11.70	0.40	11.60	0.00	-0.40
% O2	0.00	0.00	0.00	0.00	0.00	0.00
% O2	12.50	12.50	0.00	12.50	0.00	0.00

UNCORRECTED REFERENCE DATA

DATE & TIME	NOx PPM	O2 %
7/31/2006 13:30	10.81	13.66
7/31/2006 13:31	10.78	13.68
7/31/2006 13:32	10.78	13.68
7/31/2006 13:33	10.75	13.69
7/31/2006 13:34	10.80	13.69
7/31/2006 13:35	10.78	13.69
7/31/2006 13:36	10.76	13.70
7/31/2006 13:37	10.86	13.70
7/31/2006 13:38	10.86	13.70
7/31/2006 13:39	10.83	13.71
7/31/2006 13:40	10.89	13.71
7/31/2006 13:41	10.85	13.71
7/31/2006 13:42	10.83	13.70
7/31/2006 13:43	10.80	13.70
7/31/2006 13:44	10.88	13.71
7/31/2006 13:45	10.90	13.70
7/31/2006 13:46	10.85	13.70
7/31/2006 13:47	10.86	13.70
7/31/2006 13:48	10.79	13.69
7/31/2006 13:49	10.64	13.70
7/31/2006 13:50	10.75	13.69

MEAN REFERENCE DATA

NOx ppm	10.81
% O2	13.70
F Factor	8710

Run 1

CORRECTED RESULTS

NOx PPM	10.76
O2 %	13.70
NOx PPM @ 15% O2	8.81
NOX LB/MMBTU	0.032

JD KENNEDY GENERATING STATION
KCT 7

07/31/06

CALIBRATION ERROR

SPAN SETTING	CAL GAS	TANK VALUE	ANALYZER VALUE	DIFF PPM	% SPAN	ANALYZER SERIAL #
	ppm NOx	0.00	0.10	0.1	0.4	
25	ppm NOx	11.60	11.60	0.0	0.0	42CHL72772-372
	ppm NOx	21.10	20.90	-0.2	-0.8	
	% O2	0.00	0.00	0.0	0.0	
25	% O2	12.50	12.50	0.0	0.0	01420B153
	% O2	22.50	22.50	0.0	0.0	

Run 2

SYSTEM BIAS AND CALIBRATION DRIFT DATA

GAS UNITS	ANALYZER VALUE	PRETEST CHECK	% SPAN	POSTTEST CHECK	% SPAN	% DRIFT
ppm NOx	0.10	0.10	0.00	0.00	-0.40	-0.40
ppm NOx	11.60	11.60	0.00	11.50	-0.40	-0.40
% O2	0.00	0.00	0.00	0.00	0.00	0.00
% O2	12.50	12.50	0.00	12.50	0.00	0.00

UNCORRECTED REFERENCE DATA

DATE & TIME	NOx PPM	O2 %
7/31/2006 13:56	10.95	13.73
7/31/2006 13:57	10.88	13.73
7/31/2006 13:58	11.03	13.73
7/31/2006 13:59	11.06	13.73
7/31/2006 14:00	11.16	13.73
7/31/2006 14:01	11.16	13.73
7/31/2006 14:02	11.14	13.73
7/31/2006 14:03	11.19	13.73
7/31/2006 14:04	11.20	13.73
7/31/2006 14:05	11.20	13.73
7/31/2006 14:06	11.26	13.72
7/31/2006 14:07	11.23	13.72
7/31/2006 14:08	11.19	13.72
7/31/2006 14:09	11.25	13.72
7/31/2006 14:10	11.33	13.72
7/31/2006 14:11	11.34	13.72
7/31/2006 14:12	11.24	13.72
7/31/2006 14:13	11.23	13.72
7/31/2006 14:14	11.18	13.72
7/31/2006 14:15	11.18	13.71
7/31/2006 14:16	11.16	13.71

MEAN REFERENCE DATA

NOx ppm	11.17	
% O2	13.72	Run 2
F Factor	8710	

CORRECTED RESULTS

NOx PPM	11.21
O2 %	13.72
NOx PPM @ 15% O2	9.22
NOX LB/MMBTU	0.034

JD KENNEDY GENERATING STATION
KCT 7

07/31/06

CALIBRATION ERROR

SPAN SETTING	CAL GAS	TANK VALUE	ANALYZER VALUE	DIFF PPM	% SPAN	ANALYZER SERIAL #
	ppm NOx	0.00	0.10	0.1	0.4	
25	ppm NOx	11.60	11.60	0.0	0.0	42CHL72772-372
	ppm NOx	21.10	20.90	-0.2	-0.8	
	% O2	0.00	0.00	0.0	0.0	
25	% O2	12.50	12.50	0.0	0.0	01420B153
	% O2	22.50	22.50	0.0	0.0	

Run 3

SYSTEM BIAS AND CALIBRATION DRIFT DATA

GAS UNITS	ANALYZER VALUE	PRETEST CHECK	% SPAN	POSTTEST CHECK	% SPAN	% DRIFT
ppm NOx	0.10	0.00	-0.40	0.10	0.00	0.40
ppm NOx	11.60	11.50	-0.40	11.50	-0.40	0.00
% O2	0.00	0.00	0.00	0.00	0.00	0.00
% O2	12.50	12.50	0.00	12.50	0.00	0.00

UNCORRECTED REFERENCE DATA

DATE & TIME	NOx PPM	O2 %
7/31/2006 14:22	11.20	13.68
7/31/2006 14:23	11.18	13.69
7/31/2006 14:24	11.11	13.68
7/31/2006 14:25	11.19	13.68
7/31/2006 14:26	11.20	13.69
7/31/2006 14:27	11.19	13.69
7/31/2006 14:28	11.20	13.69
7/31/2006 14:29	11.26	13.69
7/31/2006 14:30	11.21	13.69
7/31/2006 14:31	11.16	13.69
7/31/2006 14:32	11.23	13.69
7/31/2006 14:33	11.20	13.69
7/31/2006 14:34	11.21	13.69
7/31/2006 14:35	11.25	13.69
7/31/2006 14:36	11.31	13.69
7/31/2006 14:37	11.26	13.69
7/31/2006 14:38	11.26	13.69
7/31/2006 14:39	11.34	13.68
7/31/2006 14:40	11.29	13.68
7/31/2006 14:41	11.25	13.68
7/31/2006 14:42	11.28	13.68

MEAN REFERENCE DATA

NOx ppm	11.23	
% O2	13.69	Run 3
F Factor	8710	

CORRECTED RESULTS

NOx PPM	11.32
O2 %	13.69
NOx PPM @ 15% O2	9.26
NOX LB/MMBTU	0.034

JD KENNEDY GENERATING STATION
KCT 7

07/31/06

CALIBRATION ERROR

SPAN SETTING	CAL GAS	TANK VALUE	ANALYZER VALUE	DIFF PPM	% SPAN	ANALYZER SERIAL #
	ppm NOx	0.00	0.10	0.1	0.4	
25	ppm NOx	11.60	11.60	0.0	0.0	42CHL72772-372
	ppm NOx	21.10	20.90	-0.2	-0.8	
	% O2	0.00	0.00	0.0	0.0	
25	% O2	12.50	12.50	0.0	0.0	01420B153
	% O2	22.50	22.50	0.0	0.0	

Run 4

SYSTEM BIAS AND CALIBRATION DRIFT DATA

GAS UNITS	ANALYZER VALUE	PRETEST CHECK	% SPAN	POSTTEST CHECK	% SPAN	% DRIFT
ppm NOx	0.10	0.10	0.00	0.10	0.00	0.00
ppm NOx	11.60	11.50	-0.40	11.50	-0.40	0.00
% O2	0.00	0.00	0.00	0.00	0.00	0.00
% O2	12.50	12.50	0.00	12.50	0.00	0.00

UNCORRECTED REFERENCE DATA

DATE & TIME	NOx PPM	O2 %
7/31/2006 14:54	11.16	13.53
7/31/2006 14:55	11.19	13.54
7/31/2006 14:56	11.25	13.54
7/31/2006 14:57	11.21	13.54
7/31/2006 14:58	11.21	13.54
7/31/2006 14:59	11.24	13.55
7/31/2006 15:00	11.25	13.55
7/31/2006 15:01	11.14	13.55
7/31/2006 15:02	11.15	13.55
7/31/2006 15:03	11.13	13.56
7/31/2006 15:04	11.10	13.56
7/31/2006 15:05	11.08	13.56
7/31/2006 15:06	11.14	13.56
7/31/2006 15:07	11.13	13.56
7/31/2006 15:08	11.13	13.56
7/31/2006 15:09	11.16	13.56
7/31/2006 15:10	11.19	13.56
7/31/2006 15:11	11.11	13.56
7/31/2006 15:12	11.15	13.55
7/31/2006 15:13	11.18	13.55
7/31/2006 15:14	11.18	13.55

MEAN REFERENCE DATA

NOx ppm	11.16	
% O2	13.55	Run 4
F Factor	8710	

CORRECTED RESULTS

NOx PPM	11.26
O2 %	13.55
NOx PPM @ 15% O2	9.04
NOX LB/MMBTU	0.033

JD KENNEDY GENERATING STATION
KCT 7

07/31/06

CALIBRATION ERROR

SPAN SETTING	CAL GAS	TANK VALUE	ANALYZER VALUE	DIFF PPM	% SPAN	ANALYZER SERIAL #
	ppm NOx	0.00	0.10	0.1	0.4	
25	ppm NOx	11.60	11.60	0.0	0.0	42CHL72772-372
	ppm NOx	21.10	20.90	-0.2	-0.8	
	% O2	0.00	0.00	0.0	0.0	
25	% O2	12.50	12.50	0.0	0.0	01420B153
	% O2	22.50	22.50	0.0	0.0	

Run 5

SYSTEM BIAS AND CALIBRATION DRIFT DATA

GAS UNITS	ANALYZER VALUE	PRETEST CHECK	% SPAN	POSTTEST CHECK	% SPAN	% DRIFT
ppm NOx	0.10	0.10	0.00	0.10	0.00	0.00
ppm NOx	11.60	11.50	-0.40	11.60	0.00	0.40
% O2	0.00	0.00	0.00	0.00	0.00	0.00
% O2	12.50	12.50	0.00	12.50	0.00	0.00

UNCORRECTED REFERENCE DATA

DATE & TIME	NOx PPM	O2 %
7/31/2006 15:20	11.19	13.56
7/31/2006 15:21	11.16	13.55
7/31/2006 15:22	11.18	13.55
7/31/2006 15:23	11.20	13.54
7/31/2006 15:24	11.24	13.54
7/31/2006 15:25	11.10	13.55
7/31/2006 15:26	11.10	13.55
7/31/2006 15:27	11.19	13.55
7/31/2006 15:28	11.18	13.55
7/31/2006 15:29	11.10	13.55
7/31/2006 15:30	11.19	13.55
7/31/2006 15:31	11.16	13.55
7/31/2006 15:32	11.26	13.54
7/31/2006 15:33	11.28	13.55
7/31/2006 15:34	11.33	13.55
7/31/2006 15:35	11.33	13.54
7/31/2006 15:36	11.29	13.54
7/31/2006 15:37	11.35	13.54
7/31/2006 15:38	11.30	13.54
7/31/2006 15:39	11.30	13.55
7/31/2006 15:40	11.34	13.55

MEAN REFERENCE DATA

NOx ppm	11.23	
% O2	13.55	Run 5
F Factor	8710	

CORRECTED RESULTS

NOx PPM	11.27
O2 %	13.55
NOx PPM @ 15% O2	9.05
NOX LB/MMBTU	0.033

JD KENNEDY GENERATING STATION
KCT 7

07/31/06

CALIBRATION ERROR

SPAN SETTING	CAL GAS	TANK VALUE	ANALYZER VALUE	DIFF PPM	% SPAN	ANALYZER SERIAL #
	ppm NOx	0.00	0.10	0.1	0.4	
25	ppm NOx	11.60	11.60	0.0	0.0	42CHL72772-372
	ppm NOx	21.10	20.90	-0.2	-0.8	
	% O2	0.00	0.00	0.0	0.0	
25	% O2	12.50	12.50	0.0	0.0	01420B153
	% O2	22.50	22.50	0.0	0.0	

Run 6

SYSTEM BIAS AND CALIBRATION DRIFT DATA

GAS UNITS	ANALYZER VALUE	PRETEST CHECK	% SPAN	POSTTEST CHECK	% SPAN	% DRIFT
ppm NOx	0.10	0.10	0.00	0.00	-0.40	-0.40
ppm NOx	11.60	11.60	0.00	11.60	0.00	0.00
% O2	0.00	0.00	0.00	0.00	0.00	0.00
% O2	12.50	12.50	0.00	12.50	0.00	0.00

UNCORRECTED REFERENCE DATA

DATE & TIME	NOx PPM	O2 %
7/31/2006 15:46	11.29	13.61
7/31/2006 15:47	11.31	13.61
7/31/2006 15:48	11.30	13.61
7/31/2006 15:49	11.26	13.61
7/31/2006 15:50	11.34	13.61
7/31/2006 15:51	11.33	13.60
7/31/2006 15:52	11.29	13.61
7/31/2006 15:53	11.23	13.61
7/31/2006 15:54	11.29	13.61
7/31/2006 15:55	11.29	13.61
7/31/2006 15:56	11.19	13.61
7/31/2006 15:57	11.19	13.61
7/31/2006 15:58	11.34	13.61
7/31/2006 15:59	11.23	13.61
7/31/2006 16:00	11.24	13.61
7/31/2006 16:01	11.21	13.61
7/31/2006 16:02	11.29	13.61
7/31/2006 16:03	11.21	13.61
7/31/2006 16:04	11.29	13.61
7/31/2006 16:05	11.33	13.61
7/31/2006 16:06	11.33	13.61

MEAN REFERENCE DATA

NOx ppm	11.27	
% O2	13.61	Run 6
F Factor	8710	

CORRECTED RESULTS

NOx PPM	11.27
O2 %	13.61
NOx PPM @ 15% O2	9.12
NOX LB/MMBTU	0.034

JD KENNEDY GENERATING STATION
KCT 7

07/31/06

CALIBRATION ERROR

SPAN SETTING	CAL GAS	TANK VALUE	ANALYZER VALUE	DIFF PPM	% SPAN	ANALYZER SERIAL #
	ppm NOx	0.00	0.10	0.1	0.4	
25	ppm NOx	11.60	11.60	0.0	0.0	42CHL72772-372
	ppm NOx	21.10	20.90	-0.2	-0.8	
	% O2	0.00	0.00	0.0	0.0	
25	% O2	12.50	12.50	0.0	0.0	01420B153
	% O2	22.50	22.50	0.0	0.0	

Run 7

SYSTEM BIAS AND CALIBRATION DRIFT DATA

GAS UNITS	ANALYZER VALUE	PRETEST CHECK	% SPAN	POSTTEST CHECK	% SPAN	% DRIFT
ppm NOx	0.10	0.00	-0.40	0.00	-0.40	0.00
ppm NOx	11.60	11.60	0.00	11.60	0.00	0.00
% O2	0.00	0.00	0.00	0.00	0.00	0.00
% O2	12.50	12.50	0.00	12.50	0.00	0.00

UNCORRECTED REFERENCE DATA

DATE & TIME	NOx PPM	O2 %
7/31/2006 16:16	11.36	13.68
7/31/2006 16:17	11.31	13.68
7/31/2006 16:18	11.34	13.68
7/31/2006 16:19	11.34	13.68
7/31/2006 16:20	11.31	13.68
7/31/2006 16:21	11.39	13.69
7/31/2006 16:22	11.41	13.68
7/31/2006 16:23	11.38	13.68
7/31/2006 16:24	11.35	13.69
7/31/2006 16:25	11.45	13.69
7/31/2006 16:26	11.43	13.69
7/31/2006 16:27	11.38	13.69
7/31/2006 16:28	11.41	13.69
7/31/2006 16:29	11.43	13.69
7/31/2006 16:30	11.35	13.69
7/31/2006 16:31	11.35	13.69
7/31/2006 16:32	11.41	13.68
7/31/2006 16:33	11.41	13.69
7/31/2006 16:34	11.40	13.68
7/31/2006 16:35	11.53	13.68
7/31/2006 16:36	11.55	13.69

MEAN REFERENCE DATA

NOx ppm	11.39	
% O2	13.68	Run 7
F Factor	8710	

CORRECTED RESULTS

NOx PPM	11.39
O2 %	13.68
NOx PPM @ 15% O2	9.32
NOX LB/MMBTU	0.034

JD KENNEDY GENERATING STATION
KCT 7

07/31/06

CALIBRATION ERROR

SPAN SETTING	CAL GAS	TANK VALUE	ANALYZER VALUE	DIFF PPM	% SPAN	ANALYZER SERIAL #
	ppm NOx	0.00	0.10	0.1	0.4	
25	ppm NOx	11.60	11.60	0.0	0.0	42CHL72772-372
	ppm NOx	21.10	20.90	-0.2	-0.8	
	% O2	0.00	0.00	0.0	0.0	
25	% O2	12.50	12.50	0.0	0.0	01420B153
	% O2	22.50	22.50	0.0	0.0	

Run 8

SYSTEM BIAS AND CALIBRATION DRIFT DATA

GAS UNITS	ANALYZER VALUE	PRETEST CHECK	% SPAN	POSTTEST CHECK	% SPAN	% DRIFT
ppm NOx	0.10	0.00	-0.40	0.00	-0.40	0.00
ppm NOx	11.60	11.60	0.00	11.60	0.00	0.00
% O2	0.00	0.00	0.00	0.00	0.00	0.00
% O2	12.50	12.50	0.00	12.50	0.00	0.00

UNCORRECTED REFERENCE DATA

DATE & TIME	NOx PPM	O2 %
7/31/2006 16:42	11.24	13.67
7/31/2006 16:43	11.19	13.68
7/31/2006 16:44	11.19	13.68
7/31/2006 16:45	11.14	13.68
7/31/2006 16:46	11.13	13.68
7/31/2006 16:47	11.18	13.68
7/31/2006 16:48	11.11	13.68
7/31/2006 16:49	11.15	13.68
7/31/2006 16:50	11.10	13.68
7/31/2006 16:51	11.19	13.68
7/31/2006 16:52	11.14	13.68
7/31/2006 16:53	11.15	13.68
7/31/2006 16:54	11.19	13.68
7/31/2006 16:55	11.13	13.68
7/31/2006 16:56	11.15	13.68
7/31/2006 16:57	11.19	13.68
7/31/2006 16:58	11.10	13.68
7/31/2006 16:59	11.18	13.68
7/31/2006 17:00	11.13	13.68
7/31/2006 17:01	11.25	13.68
7/31/2006 17:02	11.21	13.69

MEAN REFERENCE DATA

NOx ppm	11.16	
% O2	13.68	Run 8
F Factor	8710	

CORRECTED RESULTS

NOx PPM	11.16
O2 %	13.68
NOx PPM @ 15% O2	9.12
NOX LB/MMBTU	0.034

JD KENNEDY GENERATING STATION
KCT 7

07/31/06

CALIBRATION ERROR

SPAN SETTING	CAL GAS	TANK VALUE	ANALYZER VALUE	DIFF PPM	% SPAN	ANALYZER SERIAL #
	ppm NOx	0.00	0.10	0.1	0.4	
25	ppm NOx	11.60	11.60	0.0	0.0	42CHL72772-372
	ppm NOx	21.10	20.90	-0.2	-0.8	
	% O2	0.00	0.00	0.0	0.0	
25	% O2	12.50	12.50	0.0	0.0	01420B153
	% O2	22.50	22.50	0.0	0.0	

Run 9

SYSTEM BIAS AND CALIBRATION DRIFT DATA

GAS UNITS	ANALYZER VALUE	PRETEST CHECK	% SPAN	POSTTEST CHECK	% SPAN	% DRIFT
ppm NOx	0.10	0.00	-0.40	0.00	-0.40	0.00
ppm NOx	11.60	11.60	0.00	11.60	0.00	0.00
% O2	0.00	0.00	0.00	0.00	0.00	0.00
% O2	12.50	12.50	0.00	12.50	0.00	0.00

UNCORRECTED REFERENCE DATA

DATE & TIME	NOx PPM	O2 %
7/31/2006 17:12	10.95	13.66
7/31/2006 17:13	10.97	13.66
7/31/2006 17:14	11.09	13.66
7/31/2006 17:15	11.09	13.67
7/31/2006 17:16	11.06	13.67
7/31/2006 17:17	11.01	13.67
7/31/2006 17:18	11.09	13.67
7/31/2006 17:19	11.03	13.65
7/31/2006 17:20	11.01	13.68
7/31/2006 17:21	11.09	13.68
7/31/2006 17:22	11.05	13.68
7/31/2006 17:23	11.01	13.68
7/31/2006 17:24	11.01	13.68
7/31/2006 17:25	11.04	13.68
7/31/2006 17:26	11.08	13.68
7/31/2006 17:27	11.09	13.68
7/31/2006 17:28	11.08	13.68
7/31/2006 17:29	11.01	13.68
7/31/2006 17:30	11.05	13.68
7/31/2006 17:31	11.09	13.68
7/31/2006 17:32	11.04	13.68

MEAN REFERENCE DATA

NOx ppm	11.04	
% O2	13.67	Run 9
F Factor	8710	

CORRECTED RESULTS

NOx PPM	11.04
O2 %	13.67
NOx PPM @ 15% O2	9.01
NOX LB/MMBTU	0.033

APPENDIX 2
QUALITY ASSURANCE

AGA
Member of the Linde Gas Group

Linde

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

LINDE SANFORD INTERBRANCH
103 COMMERCE WAY
SANFORD FL 32771
USA
407-321-4030

Material:	6232	**Blend Tolerance:**	5 % Relative
EPA NO/N2 2-49 PPM	A31	**Blend Type:**	EPA Protocol
Production #:	100108640	**Cyl. Pressure:**	2000 psig
Lot #:	02499K5170JE	**Balance Gas:**	Nitrogen
Cylinder #:	CC35111	**CGA:**	660
Expiration Date:	10/28/2007	**Analytical Accuracy:**	1.00 % Relative
~~**Shelf Life:**~~	~~24 months~~	**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
10102-43-9	Nitric Oxide	11.25 to 13.75	11.5 +/- 0.1 ppm	10/28/2005
7727-37-9	Nitrogen		Balance	10/28/2005

CAS #	Analyzed (For Ref Use Only)	Concentration	Analysis Date
N/A	NOx	11.6 ppm	10/28/2005

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
10102-43-9	Nitric Oxide	CC148260 , GMIS	21.52 ppm	09/23/2007

Instrument	Serial #	Analytical Principle	Calibration Date
Thermo Nicolet AEM	AET0100218	FTIR	10/11/2005

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Jennifer Carney

Jennifer Carney

HiQ Analysis Certificate

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

LINDE SANFORD INTERBRANCH
103 COMMERCE WAY
SANFORD FL 32771
USA
407-321-4030

Material:	6232	**Blend Tolerance:**	5 % Relative
EPA NO/N2 2-49 PPM	A31	**Blend Type:**	EPA Protocol
Production #:	100108641	**Cyl. Pressure:**	2000 psig
Lot #:	02499L5150JA	**Balance Gas:**	Nitrogen
Cylinder #:	CC154252	**CGA:**	660
Expiration Date:	11/29/2007	**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	24 months	**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
10102-43-9	Nitric Oxide	20 to 22.5	21.0 +/- 0.2 ppm	11/29/2005
7727-37-9	Nitrogen		Balance	11/29/2005

CAS #	Analyzed (For Ref Use Only)	Concentration	Analysis Date
N/A	NOx	21.1 ppm	11/29/2005

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
10102-43-9	Nitric Oxide	CC148260 , GMIS	21.52 ppm	09/23/2007

Instrument	Serial #	Analytical Principle	Calibration Date
Thermo Nicolet AEM	AET0100218	FTIR	10/11/2005

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Jennifer Carney

Jennifer Carney

HiQ Analysis Certificate

AGA
ember of the Linde Gas Group

Linde

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

LINDE SANFORD INTERBRANCH
103 COMMERCE WAY
SANFORD FL 32771
USA
407-321-4030

Material:	2179		**Blend Tolerance:**	5 % Relative
MISC 3 COMPONENT	EPA	A31	**Blend Type:**	EPA Protocol
Production #:	100108399		**Cyl. Pressure:**	2000 psig
Lot #:	02499K5180GE		**Balance Gas:**	Nitrogen
Cylinder #:	CC13992		**CGA:**	590
Expiration Date:	10/24/2008		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
7782-44-7	Oxygen	10 to 15	12.5 +/- 0.1 %	10/24/2005
124-38-9	Carbon Dioxide	8 to 12	9.89 +/- 0.1 %	10/24/2005
7727-37-9	Nitrogen		Balance	10/24/2005

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
124-38-9	Carbon Dioxide	CC59170 , NTRM	13.78 %	10/02/2008
7782-44-7	Oxygen	CC73283 , NTRM	20.89 %	10/02/2008

Instrument	Serial #	Analytical Principle	Calibration Date
Horiba VIA-510	568849043	Non-Dispersive Infrared	10/03/2005
Rosemount 755R	1000559	Paramagnetic	10/10/2005

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Jennifer Carney

Jennifer Carney

HiQ Analysis Certificate

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	2179		**Blend Tolerance:**	5 % Relative
MISC 3 COMPONENT EPA		A31	**Blend Type:**	EPA Protocol
Production #:	100112828		**Cyl. Pressure:**	2000 psig
Lot #:	30499A6140DB		**Balance Gas:**	Nitrogen
Cylinder #:	CC209776		**CGA:**	590
Expiration Date:	1/18/2009		**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months		**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
7782-44-7	Oxygen	20 to 25	22.5 +/- 0.15 %	01/18/2006
124-38-9	Carbon Dioxide	16 to 20	17.7 +/- 0.18 %	
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
7782-44-7	Oxygen	CC73282 , NTRM	20.89 %	06/13/2009
124-38-9	Carbon Dioxide	CC59221 , NTRM	19.91 %	06/13/2009

Instrument	Serial #	Analytical Principle	Calibration Date
Teledyne 3000M	240141	Paramagnetic	01/18/2006
HORIBA MODEL VIA-510 CO2	4285416002	NDIR	01/18/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Lance Crayton

HQ Analysis Certificate

Linde Gas

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Charlotte
4236 Statesville Road
CHARLOTTE NC 28269

Material:	6154 EPA CO/N2 10-99 PPM A31	**Blend Tolerance:**	5 % Relative
Production #:	100119583	**Blend Type:**	EPA Protocol
Lot #:	30499E6240CA	**Cyl. Pressure:**	2000 psig
Cylinder #:	CC56226	**Balance Gas:**	Nitrogen
Expiration Date:	6/6/2009	**CGA:**	350
Shelf Life:	36 months	**Analytical Accuracy:**	1.00 % Relative
		Confidence:	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	15	15.9 +/- 0.2 ppm	06/06/2006
7727-37-9	Nitrogen		Balance	

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC180333 , NTRM	10.17 ppm	07/11/2009

Instrument	Serial #	Analytical Principle	Calibration Date
HORIBA MODEL VIA-510 CO	4345887002	NDIR	06/06/2006

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Anthony Larocca

A. LaRocca

HiQ Analysis Certificate

AGA
Member of the Linde Gas Group

Linde

Certificate of Analysis

EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

Manufactured and certified at:

Linde Gas LLC
Maumee Specialty Gas Plant
6421 Monclova Road
MAUMEE OH 43537
419-893-7226

Produced for customer:

LINDE SANFORD INTERBRANCH
103 COMMERCE WAY
SANFORD FL 32771
USA
407-321-4030

Material:	6154	**Blend Tolerance:**	5 % Relative
EPA CO/N2 10-99 PPM	A31	**Blend Type:**	EPA Protocol
Production #:	100094998	**Cyl. Pressure:**	2000 psig
Lot #:	02499A5200MI	**Balance Gas:**	Nitrogen
Cylinder #:	CC97588	**CGA:**	350
Expiration Date:	2/1/2008	**Analytical Accuracy:**	1.00 % Relative
Shelf Life:	36 months	**Confidence:**	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	30	30.4 +/- 0.3 ppm	02/01/2005
7727-37-9	Nitrogen		Balance	02/01/2005

CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expire Date
630-08-0	Carbon Monoxide	CC13642 , GMIS	51.53 ppm	01/29/2006

Instrument	Serial #	Analytical Principle	Calibration Date
Horiba VIA-510	569466011	Non-Dispersive Infrared	12/09/2004

All analyses are performed under controlled environmental conditions.This product is manufactured using equipment which has been calibrated with NIST traceable, or equivalent, standards, weights, or equipment.

Analytical report approved by Jennifer Carney

Jennifer Carney

HiQ Analysis Certificate

APPENDIX 3
SAMPLE CALCULATIONS

Compliance Assurance Associates, Inc.

Helping Industry Comply with Environmental Regulations

This is to acknowledge that

Donnie Leeper

has successfully participated in Visible Emissions Evaluation field training and met the requirements of 40 CFR 60 Appendix A, Reference Method 9 as amended, on May 10th, 2006, and is therefore certified to evaluate Visible Emissions, in accordance to Method 9 for a period of 6 months from this certification, by Compliance Assurance Associates, Inc.

Kenneth Hyde

Instructor, President

May 10th, 2006
Date

Palatka, FL
Location

SAMPLE POLLUTANT CALCULATIONS

CORRECTED CONCENTRATION (CO), 15 % O2, Eq. 20-4:

$$C = (Cd) * \frac{5.9}{(20.9 - \%\ O2)}$$

Cd = Pollutant concentration measured, dry, basis, ppm.

% O2 = Measured O2 concentration, dry basis, percent.

CORRECTED CONCENTRATION (NOx), 15 % O2, Eq. 20-4:

$$C = (Cd) * \frac{5.9}{(20.9 - \%\ O2)}$$

Cd = Pollutant concentration measured, dry, basis, ppm.

% O2 = Measured O2 concentration, dry basis, percent.

POLLUTANT CONCENTRATION (CO), lb/mmBtu, Eq. 19-1:

E = (Cd) * (Fd) * [(20.9/20.9 - %O2d)]

Cd = (conc. dry,ppm) * (2.59 x 10E-9) * (mole. wt.)

Fd = 8710 for gas, 9190 for oil

%O2d = dry O2 concentration,%

POLLUTANT CONCENTRATION (NOx), lb/mmBtu, Eq. 19-1:

E = (Cd) * (Fd) * [(20.9/20.9 - %O2d)]

Cd = (conc. dry,ppm) * (2.59 x 10E-9) * (mole. wt.)

Fd = 8710 for gas, 9190 for oil

%O2d = dry O2 concentration,%

EMISSION RATE CO (lb/hr) = Emission Rate * Heat Input
(lb/mmBtu) (mmBtu/hr)

EMISSION RATE NOx (lb/hr) = Emission Rate * Heat Input
(lb/mmBtu) (mmBtu/hr)

SAMPLE EQUATIONS
FOR CEMS RELATIVE ACCURACY TEST AUDITS

CALCULATIONS FOR FLUE GAS VOLUME AND MOISTURE

Time	Dry Gas Meter Ft^3	Pitot ΔP In. H_2O	Orifice ΔH In. H_2O	Dry Gas Temp.°F In	Out	Flue Gas Static Pressure In. H_2O	Stack Temp.°F
T	V_m	Δp	ΔH	TMI	TMO	P_g	t_s

1. P_{bar} = Barometric Pressure (in. Hg)

2. TT = Net Sampling Time (minutes)

3. V_m = V_m Final - V_m Initial = Sample Gas Volume (Ft^3)

4. T_m = Average Dry Gas Temperature at Meter (°F)

$$T_m = \frac{Avg.TMI + Avg.TMO}{2}$$

5. Δp = Velocity head of stack gas (in. H_2O)

6. ΔH = Average Orifice Pressure Drop (in.H_2O)

7. Volume of dry gas sampled at standard conditions[a] (DSCF)

$$V_{m(std)} = \frac{(17.64)(V_m)(Y)\left(P_{bar} + \frac{\Delta H}{13.6}\right)}{(T_m + 460)}$$

8. V_{lc} = Total Water Collected = gm H_2O Silica gel + ml Imp. H_2O = ml

9. Volume of water vapor at standard conditions[b] (SCF)

$$V_{w(std)} = 0.0471(V_{lc}) = SCF$$

10. Percent moisture in flue gas

$$\%M = \frac{100(V_{w(std)})}{V_{m(std)} + V_{w(std)}}$$

11. Mole fraction of water vapor in flue gas

$$B_{ws} = \frac{\%M}{100}$$

12. Molecular Weight of dry flue gas

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$

13. Molecular weight of wet flue gas

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$

14. A = Cross-sectional area of stack (Ft^2)

$$\frac{\pi r^2}{144}$$

15. P_s = Flue gas pressure (in, Hg)

$$P_s = P_{bar} + P_g$$

NOTE: $$P_g(Hg) = \frac{P_g(in.H_2O)}{13.6}$$

16. T_s = Absolute stack temperature (°R)

$$T_s = 460 + t_s$$

17. Flue velocity at stack conditions (FT/SEC)

$$V_s = (K_p)(C_p)\left[\left(\sqrt{\Delta p}\right)avg\right]\sqrt{\frac{T_s(avg)}{P_s * M_s}}$$

C_p = pitot tube coefficient
K_p = pitot tube constant = 85.49ft/sec

18. Flue gas volumetric flow rate at standard conditions[b] (SCFM)

$$Q_s = (V_s)(A)\left(\frac{528}{T_s(avg.)}\right)\left(\frac{P_s}{29.92}\right)(60)$$

19. Flue gas volumetric flow rate at standard conditions[c] (DSCFM)

$$Q_{sd} = (1 - B_{ws})(V_s)(A)\left(\frac{528}{T_s(avg.)}\right)\left(\frac{P_s}{29.92}\right)(60)$$

20. Flue gas volumetric flow rate at stack conditions (ACFM)

$$Q_a = (V_s)(A)(60)$$

NOTES:
[a]Dry standard cubic feet at 68°F, 29.92 in. Hg
[b]Standard conditions at 68°F, 29.92 in. Hg
[c]Dry standard cubic feet per minute at 68°F, 29.92 in. Hg

F-FACTOR DETERMINATION

THE WET F-FACTOR (F_w):

Includes all components of combustion

$$F_w = \frac{10^6\ Btu/mmBtu\left[5.57(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O_2) + 0.21(\%H_2O)\right]}{GCV_{wet}}$$

THE DRY F-FACTOR (F_d):

Includes all components of combustion less water

$$F_d = \frac{10^6\ Btu/mmBtu\left[3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O_2)\right]}{GCV_{dry}}$$

THE CARBON F-FACTOR (F_c):

Includes only Carbon Dioxide

$$F_c = \frac{10^6\ Btu/mmBtu\left[0.321(\%C)\right]}{GCV_{dry}}$$

References for the above equations (i.e. %H, %C, %N, %S, $\%O_2$) can be found in 40 CFR Part 60, Appendix A, Method 19.

LBS/MMBTU CALCULATIONS USING THE F-FACTOR

1. EMISSION RATE *E(lb/mmbtu)*, O_2 based

$$E(lb/mmbtu) = C \times F_d \left(\frac{20.9}{20.9 - \%O_2} \right)$$

Where:

C(lb/dscf) = Pollutant concentration (ppm) x conversion factor.

Conversion Factors:

NOx = 1.194×10^{-7}

SO_2 = 1.660×10^{-7}

CO = 7.274×10^{-8}

C_3H_8 = 1.145×10^{-7}

F_d*(dscf/mmbtu)* = "F" Factor for fuel type, (Ref. EPA Method 19)

F_d (Coal) = 9780

F_d (Gas) = 8710

F_d (Oil) = 9190

2. EMISSION RATE *E(lb/mmbtu)*, CO_2 based

$$E(lb/mmbtu) = C \times F_c \left(\frac{100}{\%CO_2} \right)$$

Where:

C(lb/dscf) = Pollutant concentration (ppm) x conversion factor.

Conversion Factors:

NOx = 1.194×10^{-7}

SO2 = 1.660×10^{-7}

CO = 7.274×10^{-8}

C_3H_8 = 1.145×10^{-7}

F_c*(dscf/mmbtu)* = "F" Factor for fuel type, (Ref. EPA Method 19)

F_d (Coal) = 1800

F_d (Gas) = 1040

F_d (Oil) = 1420

CALCULATION FOR GAS CONCENTRATION

GAS CONCENTRATION (C_{gas})

$$C_{gas} = \left(\overline{C} - C_0\right)\left(\frac{C_{ma}}{C_m - C_o}\right)$$

C_{gas} = Effluent gas concentration, ppm

$\overline{C}$ = Average gas concentration indicated by gas analyzer, dry basis, ppm

C_0 = Average of initial and final system calibration bias check responses for the zero gas, ppm

C_m = Average of initial and final system calibration bias check responses for the upscale calibration gas, ppm

C_{ma} = Actual concentration of the upscale calibration gas, ppm

GAS CONCENTRATION @ 15% O_2 (C_{gas} @ 15% O_2)

$$C_{gas} @ 15\% O_2 = C_{gas} * ((20.9-15)/(20.9-\%O_2))$$

GAS CONCENTRATION @ 7% O_2 (C_{gas} @ 7% O_2)

$$C_{gas} @ 7\% O_2 = C_{gas} * ((20.9-7)/(20.9-\%O_2))$$

CALCULATION OF RELATIVE ACCURACY

ARITHMETIC MEAN (OF THE DIFFERENCE , {d}, OF A DATA SET)

$$\bar{d} = \frac{1}{n}\sum_{i=1}^{n} d_i$$

Where n = Number of data points.

ALGEBRAIC SUM (OF THE INDIVIDUAL DIFFERENCES, $\{d_i\}$)

$$\sum_{i=1}^{n} d_i$$

STANDARD DEVIATION, S_d

$$S_d = \sqrt{\frac{\sum_{i=1}^{n} d_i^2 - \left(\frac{\left(\sum_{i=1}^{n} d_i\right)^2}{n}\right)}{n-1}}$$

CONFIDENCE COEFFICIENT, CC

$$CC = t_{0.975}\frac{S_d}{\sqrt{n}}$$

For 9 tests $t_{0.975} = 2.306$

For 10 tests $t_{0.975} = 2.262$

For 11 tests $t_{0.975} = 2.228$

For 12 tests $t_{0.975} = 2.201$

RELATIVE ACCURACY, RA

$$RA = \frac{|\bar{d}| + |CC|}{\overline{RM}} x100$$

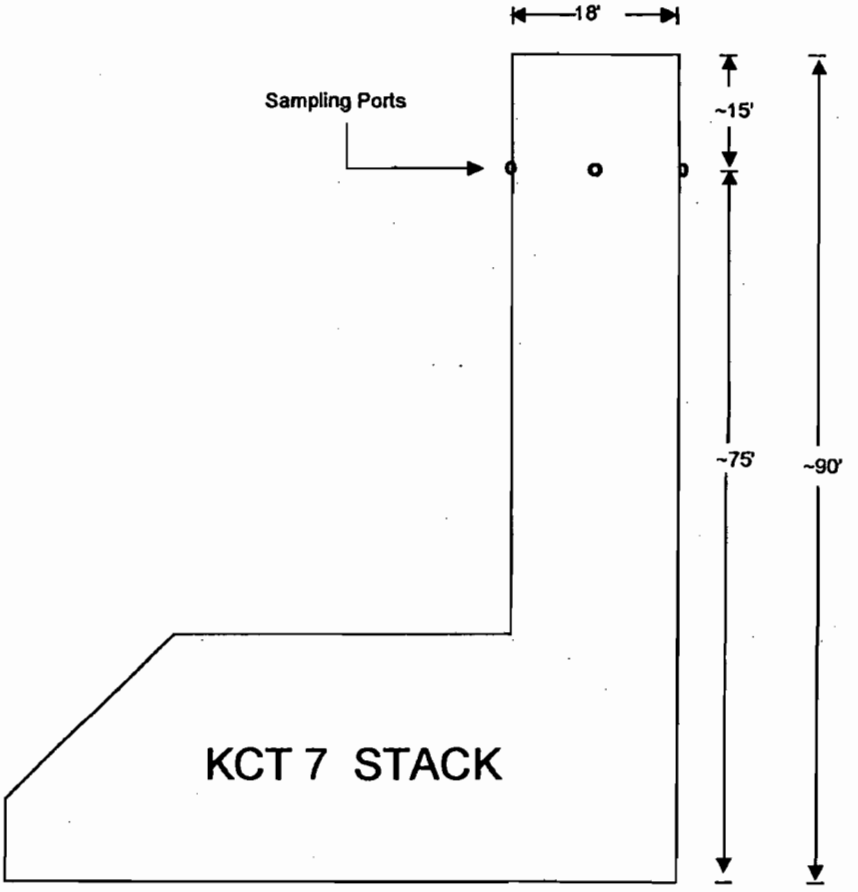
APPENDIX 4
FIGURES

COMBUSTION TURBINE KCT7 STACK
KENNEDY GENERATING STATION
SAMPLING SPECIFICATIONS

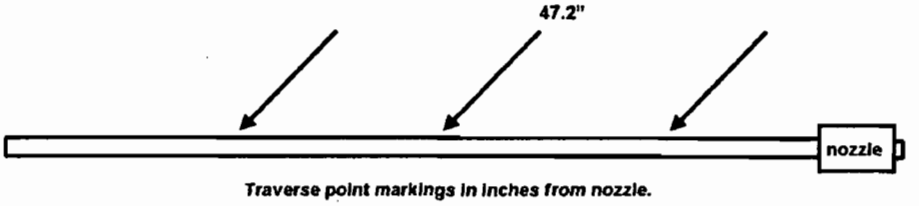
Pollutant and diluent sampling is conducted at one point, inches from the inner stack wall as per 40 CFR 75 App. A, section 6.5.6.

STACK SPECIFICATIONS

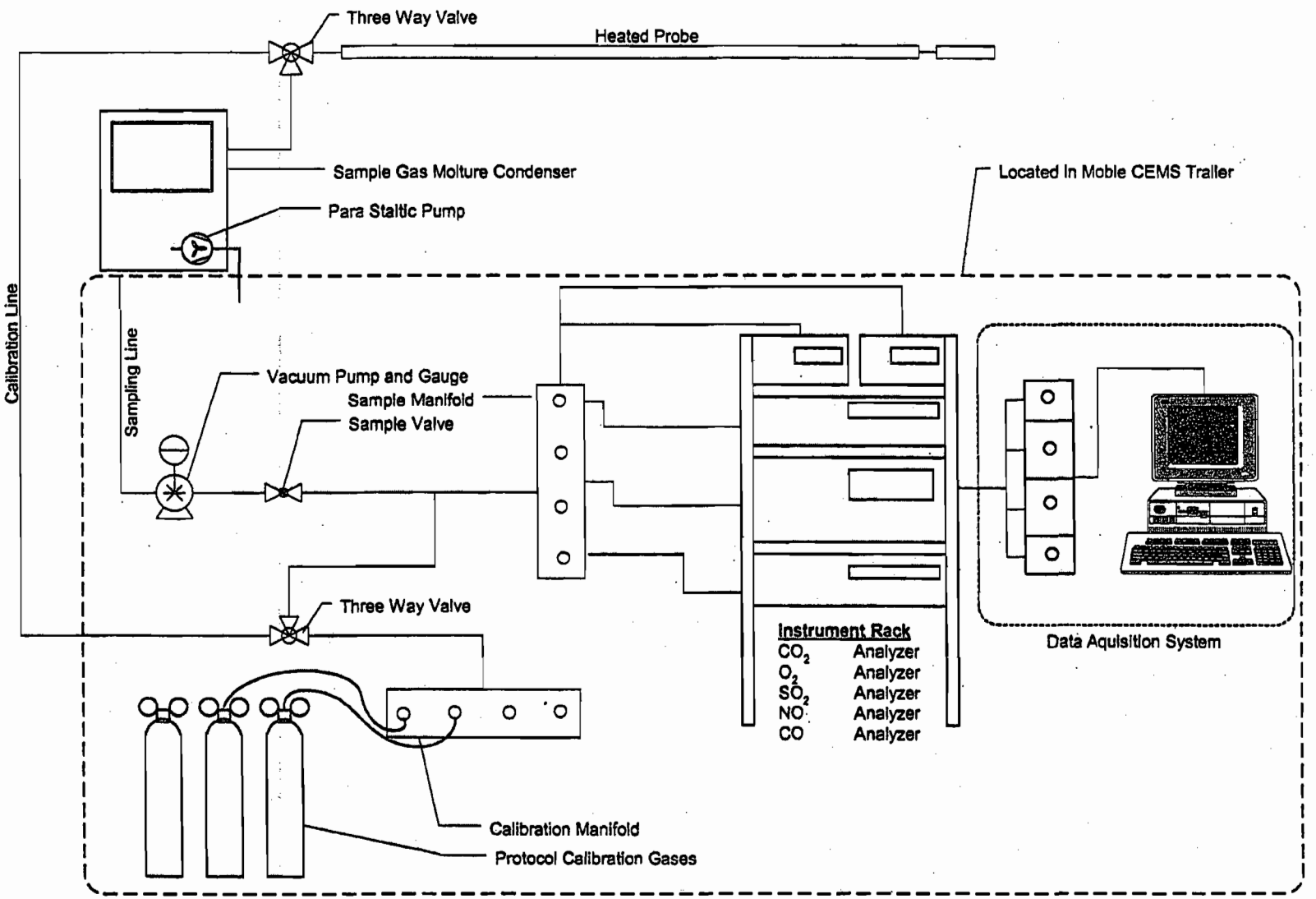
SAMPLING DIAMETER: 216 in.
SAMPLING AREA: 254.5 sq. ft.
SAMPLING PORT DEPTH: 20 in.
NOTE: DRAWING IS NOT TO SCALE



GAS PROBE MARKINGS

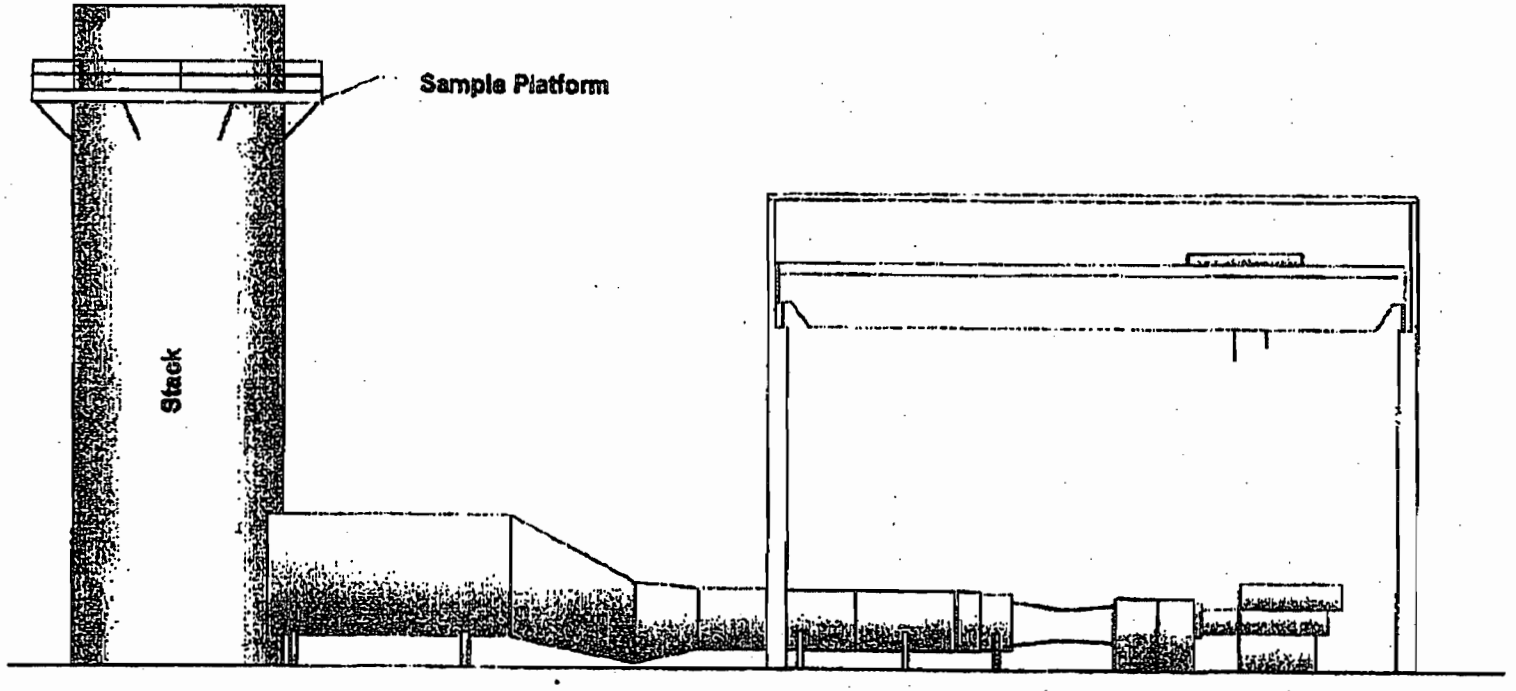


Traverse point markings in inches from nozzle.



Coastal Air Consulting, Inc
1531 Wyngate Drive, Deland FL
(386) 943-9241 Fax (386) 943 9212

DRAWN BY R F Cobb	TITLE EPA Instrumental Sample Train	DESCRIPTION Sample Train Schematic
DATE 4/15/02	SCALE NONE	



GENERAL ARRANGEMENT

APPENDIX 5
PLANT DATA

4377 Heckscher Drive

Jacksonville, Florida 32226-3099

08/09/06

Mr. Stephen C. Webb, President
Coastal Air Consulting Inc.
1531 Wyngate Drive
DeLand, FL. 32724

Dear Sir;

Natural gas annual environmental and CEMS RATA testing was conducted on JEA J.D. Kennedy Generating Station, Combustion Turbine #7 (KCT7) on 7/31/06. During all testing the unit was operated under "base loaded" conditions.

The unit operational data for this test is as follows:

MWe(socc)	154.99
Compressor Inlet degF	83.45
#2FO #/sec	0.00
NatGas #/sec	20.66
BTU/# - HHV	23495
HHV - BTUH	1.748E+09
BTU/# - LHV	21166
LHV - BTUH	1.574E+09

Start (EDT)	O2 traverse	7/31/06 1:10 PM
Finish(EDT)	Run 9 RATA	7/31/06 6:32 PM

To the best of my knowlege, this information is true and accurate.

Sincerely,

Joseph W. Werner

Joseph W. Werner, PE

Gas Fuel HHV to LHV

KCT7 tested on 7/31/06	ASTM D-3588	BROOKER LATERAL		ASTM D-3588 HHV BTU/#	ASTM D-3588 HHV BTU/#	ASTM D-3588 LHV BTU/#	ASTM D-3588 LHV BTU/#
	MolWt	MOLE%	#/#mole	60 | 14.696		60 | 14.696	
METHANE	16.043	0.95553	15.330	23891	22828.57	21511	20554.41
ETHANE	30.070	0.02305	0.693	22333	514.78	20429	470.89
PROPANE	44.097	0.00424	0.187	21653	91.81	19922	84.47
i - BUTANE	58.123	0.00092	0.053	21232	19.53	19590	18.02
n - BUTANE	58.123	0.00086	0.050	21300	18.32	19568	16.83
i - PENTANE	72.150	0.00033	0.024	21043	6.94	19456	6.42
n - PENTANE	72.150	0.00020	0.014	21085	4.22	19481	3.90
(C6+)	92.000	0.00053	0.049	20799.17	11.02	20799.17	11.02
MOISTURE	18.015	0.00000	0.000	1059.8	0.00	0	0.00
NITROGEN	28.013	0.00601	0.168	0	0.00	0	0.00
(CO2)	44.010	0.00833	0.367	0	0.00	0	0.00
		1.00	16.935		23495		21166

	C6+ C6Hx	
MolWt	92.00	
MOLE%	0.00053	
FT3/AF Mole	0.2007	@60-14.73
#/AF MOLE	0.0488	
FT3/#	4.1153	@60-14.73
BTU/cf@60-14.73	5065.80	
BTU/#@60-14.73	20847.29	
BTU/#@60-14.696	20799.17	

JEA KCT #7

Annual Environmental Test and CEMS RATA
FGT Chromatograph 8001

July 31, 2006

MAINLINE BROOKER = 8001

Panhandle Energy Chromatograph

Florida Gas Transmission-8001

Date	BTU	CO2	N2	Grav	Methan	thar	Propan	Ibutan	Nbutan	Ipenta	Npenta	C6	C7	H2	He	O2
8/2/2006	1030	0.852	0.567	0.585	95.768	2	0.385	0.091	0.085	0.033	0.021	0.057	0	0	0	0
8/1/2006	1031	0.835	0.571	0.585	95.691	2	0.396	0.095	0.087	0.034	0.02	0.051	0	0	0	0
7/31/2006	1032	0.833	0.601	0.586	95.553	2	0.424	0.092	0.086	0.033	0.02	0.053	0	0	0	0
7/30/2006	1036	0.85	0.593	0.589	95.238	2	0.476	0.112	0.106	0.041	0.025	0.065	0	0	0	0
7/29/2006	1035	0.904	0.548	0.589	95.224	3	0.462	0.111	0.101	0.039	0.023	0.064	0	0	0	0
7/28/2006	1034	0.927	0.558	0.588	95.29	2	0.444	0.105	0.098	0.037	0.023	0.066	0	0	0	0
7/27/2006	1034	0.891	0.532	0.588	95.456	2	0.444	0.108	0.101	0.04	0.025	0.068	0	0	0	0
7/26/2006	1034	0.814	0.546	0.586	95.577	2	0.428	0.103	0.097	0.038	0.024	0.062	0	0	0	0
7/25/2006	1035	0.814	0.567	0.587	95.464	2	0.441	0.105	0.099	0.038	0.024	0.066	0	0	0	0
8/1/2006	1031	0.835	0.571	0.585	95.691	2	0.396	0.095	0.087	0.034	0.02	0.051	0	0	0	0
BCT1 tested on 8/1/06																
7/31/2006	1032	0.833	0.601	0.586	95.553	2	0.424	0.092	0.086	0.033	0.02	0.053	0	0	0	0
KCT7 tested on 7/31/06																

Average Values Report
Generated: 7/31/2006 13:51

RUN #1

Company: JEA Kennedy
Plant: 4215 Talleyrand Avenue
City/St: Jacksonville, FL 32206
Source: CT7

Period Start: 7/31/2006 13:30
Period End: 7/31/2006 13:50
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 7_NOx ppm	Average 7_NOxC_gas ppmC	Average 7_O2 %	Average 7_NOx_lbMM #/M	Average 7_Gas_Flow #/sec	Average 7_Fd_Comb	Average 7_Oil_Flow gpm	Average 7_MW MW
07/31/2006 13:30	11.0	8.85	13.57	0.033	20.4	8710	N/A	150.4
07/31/2006 13:31	11.0	8.85	13.57	0.033	20.4	8710	N/A	150.5
07/31/2006 13:32	10.9	8.77	13.57	0.032	20.4	8710	N/A	150.3
07/31/2006 13:33	10.9	8.77	13.57	0.032	20.4	8710	N/A	150.5
07/31/2006 13:34	10.9	8.77	13.57	0.032	20.3	8710	N/A	150.2
07/31/2006 13:35	11.0	8.85	13.57	0.033	20.3	8710	N/A	149.9
07/31/2006 13:36	10.9	8.77	13.57	0.032	20.3	8710	N/A	150.0
07/31/2006 13:37	11.0	8.85	13.57	0.033	20.4	8710	N/A	150.3
07/31/2006 13:38	11.0	8.85	13.57	0.033	20.4	8710	N/A	150.3
07/31/2006 13:39	11.0	8.84	13.56	0.033	20.4	8710	N/A	149.7
07/31/2006 13:40	11.0	8.84	13.56	0.033	20.3	8710	N/A	149.4
07/31/2006 13:41	11.0	8.85	13.57	0.033	20.3	8710	N/A	149.7
07/31/2006 13:42	11.0	8.84	13.56	0.033	20.3	8710	N/A	149.4
07/31/2006 13:43	10.9	8.76	13.56	0.032	20.3	8710	N/A	149.4
07/31/2006 13:44	11.0	8.85	13.57	0.033	20.4	8710	N/A	150.1
07/31/2006 13:45	11.1	8.92	13.56	0.033	20.4	8710	N/A	150.3
07/31/2006 13:46	11.0	8.84	13.56	0.033	20.4	8710	N/A	150.5
07/31/2006 13:47	11.1	8.92	13.56	0.033	20.3	8710	N/A	150.0
07/31/2006 13:48	11.0	8.83	13.55	0.033	20.3	8710	N/A	149.6
07/31/2006 13:49	10.8	8.68	13.56	0.032	20.3	8710	N/A	149.7
07/31/2006 13:50	10.9	8.76	13.56	0.032	20.3	8710	N/A	149.9
Final Average*	**11.0**	**8.82**	**13.56**	**0.033**	**20.3**	**8710**	**N/A**	**150.0**
Maximum*	11.1	8.92	13.57	0.033	20.4	8710	N/A	150.5
	07/31/2006 13:47	07/31/2006 13:47	07/31/2006 13:44	07/31/2006 13:48	07/31/2006 13:46	07/31/2006 13:50		07/31/2006 13:46
Minimum*	10.8	8.68	13.55	0.032	20.3	8710	N/A	149.4
	07/31/2006 13:49	07/31/2006 13:49	07/31/2006 13:48	07/31/2006 13:50	07/31/2006 13:50	07/31/2006 13:50		07/31/2006 13:43

* Does not include Invalid Averaging Periods ("N/A")

Average Values Report
Generated: 7/31/2006 14:20

RUN #2

Company: JEA Kennedy
Plant: 4215 Talleyrand Avenue
City/St: Jacksonville, FL 32206
Source: CT7

Period Start: 7/31/2006 13:56
Period End: 7/31/2006 14:16
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 7_NOx ppm	Average 7_NOxC_gas ppmC	Average 7_O2 %	Average 7_NOx_lbMM #/M	Average 7_Gas_Flow #/sec	Average 7_Fd_Comb	Average 7_Oil_Flow gpm	Average 7_MW MW
07/31/2006 13:56	11.1	8.97	13.60	0.033	20.4	8710	N/A	150.8
07/31/2006 13:57	11.2	9.05	13.60	0.033	20.5	8710	N/A	152.4
07/31/2006 13:58	11.3	9.13	13.60	0.034	20.6	8710	N/A	153.4
07/31/2006 13:59	11.3	9.13	13.60	0.034	20.7	8710	N/A	153.8
07/31/2006 14:00	11.4	9.21	13.60	0.034	20.7	8710	N/A	154.1
07/31/2006 14:01	11.4	9.21	13.60	0.034	20.7	8710	N/A	154.2
07/31/2006 14:02	11.3	9.12	13.59	0.034	20.7	8710	N/A	153.9
07/31/2006 14:03	11.4	9.20	13.59	0.034	20.7	8710	N/A	154.1
07/31/2006 14:04	11.4	9.20	13.59	0.034	20.8	8710	N/A	154.4
07/31/2006 14:05	11.4	9.20	13.59	0.034	20.8	8710	N/A	154.9
07/31/2006 14:06	11.4	9.20	13.59	0.034	20.8	8710	N/A	155.1
07/31/2006 14:07	11.5	9.28	13.59	0.034	20.9	8710	N/A	155.4
07/31/2006 14:08	11.4	9.20	13.59	0.034	20.8	8710	N/A	155.2
07/31/2006 14:09	11.4	9.20	13.59	0.034	20.8	8710	N/A	155.4
07/31/2006 14:10	11.5	9.28	13.59	0.034	20.8	8710	N/A	155.6
07/31/2006 14:11	11.4	9.20	13.59	0.034	20.9	8710	N/A	155.4
07/31/2006 14:12	11.4	9.20	13.59	0.034	20.9	8710	N/A	155.3
07/31/2006 14:13	11.4	9.20	13.59	0.034	20.9	8710	N/A	155.9
07/31/2006 14:14	11.3	9.12	13.59	0.034	20.9	8710	N/A	155.6
07/31/2006 14:15	11.2	9.04	13.59	0.033	20.9	8710	N/A	156.2
07/31/2006 14:16	11.3	9.12	13.59	0.034	20.9	8710	N/A	156.4
Final Average*	**11.4**	**9.16**	**13.59**	**0.034**	**20.8**	**8710**	**N/A**	**154.6**
Maximum*	11.5	9.28	13.60	0.034	20.9	8710	N/A	156.4
	07/31/2006 14:10	07/31/2006 14:10	07/31/2006 14:01	07/31/2006 14:16	07/31/2006 14:16	07/31/2006 14:16		07/31/2006 14:16
Minimum*	11.1	8.97	13.59	0.033	20.4	8710	N/A	150.8
	07/31/2006 13:56	07/31/2006 13:56	07/31/2006 14:16	07/31/2006 14:15	07/31/2006 13:56	07/31/2006 14:16		07/31/2006 13:56

* Does not include Invalid Averaging Periods ("N/A")

Average Values Report
Generated: 7/31/2006 14:51

RUN #3

Company: JEA Kennedy
Plant: 4215 Talleyrand Avenue
City/St: Jacksonville, FL 32206
Source: CT7

Period Start: 7/31/2006 14:22
Period End: 7/31/2006 14:42
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 7_NOx ppm	Average 7_NOxC_gas ppmC	Average 7_O2 %	Average 7_NOx_lbMM #/M	Average 7_Gas_Flow #/sec	Average 7_Fd_Comb	Average 7_Oil_Flow gpm	Average 7_MW MW
07/31/2006 14:22	11.2	9.03	13.58	0.033	21.0	8710	N/A	157.4
07/31/2006 14:23	11.2	9.03	13.58	0.033	21.0	8710	N/A	157.2
07/31/2006 14:24	11.1	8.95	13.58	0.033	21.0	8710	N/A	157.4
07/31/2006 14:25	11.2	9.02	13.57	0.033	21.0	8710	N/A	157.3
07/31/2006 14:26	11.2	9.02	13.57	0.033	21.0	8710	N/A	157.4
07/31/2006 14:27	11.2	9.03	13.58	0.033	21.1	8710	N/A	157.6
07/31/2006 14:28	11.2	9.03	13.58	0.033	21.1	8710	N/A	158.1
07/31/2006 14:29	11.2	9.03	13.58	0.033	21.1	8710	N/A	157.4
07/31/2006 14:30	11.2	9.02	13.57	0.033	21.1	8710	N/A	157.8
07/31/2006 14:31	11.1	8.93	13.57	0.033	21.1	8710	N/A	157.5
07/31/2006 14:32	11.2	9.02	13.57	0.033	21.1	8710	N/A	158.2
07/31/2006 14:33	11.2	9.02	13.57	0.033	21.1	8710	N/A	158.3
07/31/2006 14:34	11.2	9.02	13.57	0.033	21.1	8710	N/A	158.1
07/31/2006 14:35	11.2	9.02	13.57	0.033	21.1	8710	N/A	157.8
07/31/2006 14:36	11.3	9.10	13.57	0.034	21.1	8710	N/A	157.4
07/31/2006 14:37	11.2	9.02	13.57	0.033	21.1	8710	N/A	157.6
07/31/2006 14:38	11.2	9.02	13.57	0.033	21.1	8710	N/A	158.4
07/31/2006 14:39	11.3	9.08	13.56	0.033	21.1	8710	N/A	158.2
07/31/2006 14:40	11.3	9.08	13.56	0.033	21.1	8710	N/A	158.4
07/31/2006 14:41	11.2	9.00	13.56	0.033	21.1	8710	N/A	158.4
07/31/2006 14:42	11.2	9.00	13.56	0.033	21.1	8710	N/A	158.4
Final Average*	**11.2**	**9.02**	**13.57**	**0.033**	**21.1**	**8710**	**N/A**	**157.8**
Maximum*	11.3 07/31/2006 14:40	9.10 07/31/2006 14:36	13.58 07/31/2006 14:29	0.034 07/31/2006 14:36	21.1 07/31/2006 14:42	8710 07/31/2006 14:42	N/A	158.4 07/31/2006 14:42
Minimum*	11.1 07/31/2006 14:31	8.93 07/31/2006 14:31	13.56 07/31/2006 14:42	0.033 07/31/2006 14:42	21.0 07/31/2006 14:26	8710 07/31/2006 14:42	N/A	157.2 07/31/2006 14:23

* Does not include Invalid Averaging Periods ("N/A")

Average Values Report
Generated: 7/31/2006 15:26

RUN #4

Company: JEA Kennedy
Plant: 4215 Talleyrand Avenue
City/St: Jacksonville, FL 32206
Source: CT7

Period Start: 7/31/2006 14:54
Period End: 7/31/2006 15:14
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 7_NOx ppm	Average 7_NOxC_gas ppmC	Average 7_O2 %	Average 7_NOx_lbMM #/M	Average 7_Gas_Flow #/sec	Average 7_Fd_Comb	Average 7_Oil_Flow gpm	Average 7_MW MW
07/31/2006 14:54	11.1	8.91	13.55	0.033	21.2	8710	N/A	158.4
07/31/2006 14:55	11.2	8.99	13.55	0.033	21.2	8710	N/A	158.5
07/31/2006 14:56	11.2	8.99	13.55	0.033	21.2	8710	N/A	158.4
07/31/2006 14:57	11.1	8.91	13.55	0.033	21.2	8710	N/A	158.5
07/31/2006 14:58	11.1	8.91	13.55	0.033	21.2	8710	N/A	158.7
07/31/2006 14:59	11.1	8.91	13.55	0.033	21.2	8710	N/A	158.7
07/31/2006 15:00	11.2	8.99	13.55	0.033	21.2	8710	N/A	158.8
07/31/2006 15:01	11.1	8.90	13.54	0.033	21.2	8710	N/A	158.4
07/31/2006 15:02	11.2	8.98	13.54	0.033	21.1	8710	N/A	158.2
07/31/2006 15:03	11.2	8.98	13.54	0.033	21.1	8710	N/A	158.2
07/31/2006 15:04	11.1	8.91	13.55	0.033	21.1	8710	N/A	158.6
07/31/2006 15:05	11.1	8.90	13.54	0.033	21.1	8710	N/A	158.4
07/31/2006 15:06	11.2	8.98	13.54	0.033	21.1	8710	N/A	158.3
07/31/2006 15:07	11.1	8.90	13.54	0.033	21.1	8710	N/A	158.4
07/31/2006 15:08	11.1	8.90	13.54	0.033	21.2	8710	N/A	158.4
07/31/2006 15:09	11.2	8.99	13.55	0.033	21.1	8710	N/A	158.2
07/31/2006 15:10	11.2	8.99	13.55	0.033	21.1	8710	N/A	158.4
07/31/2006 15:11	11.2	8.99	13.55	0.033	21.1	8710	N/A	158.4
07/31/2006 15:12	11.2	8.99	13.55	0.033	21.1	8710	N/A	158.2
07/31/2006 15:13	11.2	8.98	13.54	0.033	21.1	8710	N/A	158.2
07/31/2006 15:14	11.2	8.98	13.54	0.033	21.1	8710	N/A	158.1
Final Average*	**11.2**	**8.95**	**13.55**	**0.033**	**21.1**	**8710**	**N/A**	**158.4**
Maximum*	11.2 07/31/2006 15:14	8.99 07/31/2006 15:12	13.55 07/31/2006 15:12	0.033 07/31/2006 15:14	21.2 07/31/2006 15:08	8710 07/31/2006 15:14	N/A	158.8 07/31/2006 15:00
Minimum*	11.1 07/31/2006 15:08	8.90 07/31/2006 15:08	13.54 07/31/2006 15:14	0.033 07/31/2006 15:14	21.1 07/31/2006 15:14	8710 07/31/2006 15:14	N/A	158.1 07/31/2006 15:14

* Does not include Invalid Averaging Periods ("N/A")

Average Values Report
Generated: 7/31/2006 15:41

RUN #5

Company: JEA Kennedy
Plant: 4215 Talleyrand Avenue
City/St: Jacksonville, FL 32206
Source: CT7

Period Start: 7/31/2006 15:20
Period End: 7/31/2006 15:40
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 7_NOx ppm	Average 7_NOxC_gas ppmC	Average 7_O2 %	Average 7_NOx_lbMM #/M	Average 7_Gas_Flow #/sec	Average 7_Fd_Comb	Average 7_Oil_Flow gpm	Average 7_MW MW
07/31/2006 15:20	11.2	8.99	13.55	0.033	21.1	8710	N/A	158.0
07/31/2006 15:21	11.2	8.99	13.55	0.033	21.1	8710	N/A	157.9
07/31/2006 15:22	11.2	8.99	13.55	0.033	21.1	8710	N/A	158.4
07/31/2006 15:23	11.2	8.99	13.55	0.033	21.1	8710	N/A	157.7
07/31/2006 15:24	11.3	9.07	13.55	0.033	21.1	8710	N/A	158.0
07/31/2006 15:25	11.1	8.91	13.55	0.033	21.1	8710	N/A	158.2
07/31/2006 15:26	11.1	8.91	13.55	0.033	21.1	8710	N/A	158.4
07/31/2006 15:27	11.2	8.99	13.55	0.033	21.1	8710	N/A	158.4
07/31/2006 15:28	11.2	8.98	13.54	0.033	21.1	8710	N/A	158.0
07/31/2006 15:29	11.1	8.91	13.55	0.033	21.1	8710	N/A	158.1
07/31/2006 15:30	11.2	8.99	13.55	0.033	21.1	8710	N/A	158.2
07/31/2006 15:31	11.2	8.99	13.55	0.033	21.1	8710	N/A	158.3
07/31/2006 15:32	11.2	8.98	13.54	0.033	21.1	8710	N/A	158.1
07/31/2006 15:33	11.3	9.06	13.54	0.033	21.1	8710	N/A	158.4
07/31/2006 15:34	11.3	9.07	13.55	0.033	21.1	8710	N/A	158.4
07/31/2006 15:35	11.3	9.07	13.55	0.033	21.1	8710	N/A	158.0
07/31/2006 15:36	11.3	9.07	13.55	0.033	21.1	8710	N/A	158.2
07/31/2006 15:37	11.4	9.14	13.54	0.034	21.1	8710	N/A	158.4
07/31/2006 15:38	11.3	9.06	13.54	0.033	21.1	8710	N/A	158.1
07/31/2006 15:39	11.3	9.06	13.54	0.033	21.1	8710	N/A	158.1
07/31/2006 15:40	11.3	9.06	13.54	0.033	21.1	8710	N/A	158.0
Final Average*	**11.2**	**9.01**	**13.55**	**0.033**	**21.1**	**8710**	**N/A**	**158.2**
Maximum*	11.4 07/31/2006 15:37	9.14 07/31/2006 15:37	13.55 07/31/2006 15:36	0.034 07/31/2006 15:37	21.1 07/31/2006 15:40	8710 07/31/2006 15:40	N/A	158.4 07/31/2006 15:37
Minimum*	11.1 07/31/2006 15:29	8.91 07/31/2006 15:29	13.54 07/31/2006 15:40	0.033 07/31/2006 15:40	21.1 07/31/2006 15:40	8710 07/31/2006 15:40	N/A	157.7 07/31/2006 15:23

* Does not include Invalid Averaging Periods ("N/A")

Average Values Report
Generated: 7/31/2006 16:07

RUN #6

Company: JEA Kennedy
Plant: 4215 Talleyrand Avenue
City/St: Jacksonville, FL 32206
Source: CT7

Period Start: 7/31/2006 15:46
Period End: 7/31/2006 16:06
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 7_NOx ppm	Average 7_NOxC_gas ppmC	Average 7_O2 %	Average 7_NOx_lbMM #/M	Average 7_Gas_Flow #/sec	Average 7_Fd_Comb	Average 7_Oil_Flow gpm	Average 7_MW MW
07/31/2006 15:46	11.2	8.98	13.54	0.033	21.1	8710	N/A	157.7
07/31/2006 15:47	11.3	9.06	13.54	0.033	21.1	8710	N/A	157.8
07/31/2006 15:48	11.3	9.06	13.54	0.033	21.1	8710	N/A	157.9
07/31/2006 15:49	11.3	9.06	13.54	0.033	21.1	8710	N/A	158.0
07/31/2006 15:50	11.3	9.06	13.54	0.033	21.1	8710	N/A	158.0
07/31/2006 15:51	11.3	9.06	13.54	0.033	21.1	8710	N/A	157.6
07/31/2006 15:52	11.3	9.06	13.54	0.033	21.1	8710	N/A	157.4
07/31/2006 15:53	11.2	8.99	13.55	0.033	21.1	8710	N/A	157.7
07/31/2006 15:54	11.3	9.07	13.55	0.033	21.1	8710	N/A	157.6
07/31/2006 15:55	11.3	9.06	13.54	0.033	21.1	8710	N/A	157.6
07/31/2006 15:56	11.2	8.98	13.54	0.033	21.1	8710	N/A	157.4
07/31/2006 15:57	11.2	8.98	13.54	0.033	21.1	8710	N/A	157.6
07/31/2006 15:58	11.3	9.07	13.55	0.033	21.1	8710	N/A	157.1
07/31/2006 15:59	11.2	8.99	13.55	0.033	21.1	8710	N/A	157.6
07/31/2006 16:00	11.2	8.99	13.55	0.033	21.1	8710	N/A	157.4
07/31/2006 16:01	11.2	8.99	13.55	0.033	21.1	8710	N/A	157.6
07/31/2006 16:02	11.3	9.07	13.55	0.033	21.1	8710	N/A	157.4
07/31/2006 16:03	11.2	8.99	13.55	0.033	21.1	8710	N/A	157.4
07/31/2006 16:04	11.3	9.06	13.54	0.033	21.0	8710	N/A	157.7
07/31/2006 16:05	11.3	9.06	13.54	0.033	21.1	8710	N/A	157.4
07/31/2006 16:06	11.3	9.07	13.55	0.033	21.0	8710	N/A	157.4
Final Average*	**11.3**	**9.03**	**13.54**	**0.033**	**21.1**	**8710**	**N/A**	**157.6**
Maximum*	11.3	9.07	13.55	0.033	21.1	8710	N/A	158.0
	07/31/2006 16:06	07/31/2006 16:06	07/31/2006 16:06	07/31/2006 16:06	07/31/2006 16:05	07/31/2006 16:06		07/31/2006 15:50
Minimum*	11.2	8.98	13.54	0.033	21.0	8710	N/A	157.1
	07/31/2006 16:03	07/31/2006 15:57	07/31/2006 16:05	07/31/2006 16:06	07/31/2006 16:06	07/31/2006 16:06		07/31/2006 15:58

* Does not include Invalid Averaging Periods ("N/A")

Average Values Report
Generated: 7/31/2006 16:38

RUN #7

Company: JEA Kennedy
Plant: 4215 Talleyrand Avenue
City/St: Jacksonville, FL 32206
Source: CT7

Period Start: 7/31/2006 16:16
Period End: 7/31/2006 16:36
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 7_NOx ppm	Average 7_NOxC_gas ppmC	Average 7_O2 %	Average 7_NOx_lbMM #/M	Average 7_Gas_Flow #/sec	Average 7_Fd_Comb	Average 7_Oil_Flow gpm	Average 7_MW MW
07/31/2006 16:16	11.3	9.06	13.54	0.033	21.0	8710	N/A	157.4
07/31/2006 16:17	11.3	9.06	13.54	0.033	21.0	8710	N/A	157.4
07/31/2006 16:18	11.3	9.06	13.54	0.033	21.0	8710	N/A	157.1
07/31/2006 16:19	11.3	9.06	13.54	0.033	21.0	8710	N/A	157.1
07/31/2006 16:20	11.3	9.06	13.54	0.033	21.0	8710	N/A	157.4
07/31/2006 16:21	11.3	9.07	13.55	0.033	21.0	8710	N/A	157.4
07/31/2006 16:22	11.4	9.14	13.54	0.034	21.1	8710	N/A	157.1
07/31/2006 16:23	11.3	9.06	13.54	0.033	21.1	8710	N/A	157.2
07/31/2006 16:24	11.3	9.07	13.55	0.033	21.1	8710	N/A	157.6
07/31/2006 16:25	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.4
07/31/2006 16:26	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.4
07/31/2006 16:27	11.4	9.14	13.54	0.034	21.1	8710	N/A	157.4
07/31/2006 16:28	11.4	9.14	13.54	0.034	21.0	8710	N/A	157.4
07/31/2006 16:29	11.4	9.14	13.54	0.034	21.0	8710	N/A	156.8
07/31/2006 16:30	11.3	9.07	13.55	0.033	21.1	8710	N/A	157.4
07/31/2006 16:31	11.3	9.07	13.55	0.033	21.0	8710	N/A	156.9
07/31/2006 16:32	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.1
07/31/2006 16:33	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.2
07/31/2006 16:34	11.4	9.14	13.54	0.034	21.0	8710	N/A	157.0
07/31/2006 16:35	11.4	9.14	13.54	0.034	21.0	8710	N/A	156.7
07/31/2006 16:36	11.5	9.22	13.54	0.034	21.0	8710	N/A	157.3
Final Average*	**11.4**	**9.11**	**13.54**	**0.034**	**21.0**	**8710**	**N/A**	**157.2**
Maximum*	11.5	9.22	13.55	0.034	21.1	8710	N/A	157.6
	07/31/2006 16:36	07/31/2006 16:36	07/31/2006 16:33	07/31/2006 16:36	07/31/2006 16:30	07/31/2006 16:36		07/31/2006 16:24
Minimum*	11.3	9.06	13.54	0.033	21.0	8710	N/A	156.7
	07/31/2006 16:31	07/31/2006 16:23	07/31/2006 16:36	07/31/2006 16:31	07/31/2006 16:36	07/31/2006 16:36		07/31/2006 16:35

* Does not include Invalid Averaging Periods ("N/A")

Average Values Report
Generated: 7/31/2006 17:13

RUN #8

Company: JEA Kennedy
Plant: 4215 Talleyrand Avenue
City/St: Jacksonville, FL 32206
Source: CT7

Period Start: 7/31/2006 16:42
Period End: 7/31/2006 17:02
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 7_NOx ppm	Average 7_NOxC_gas ppmC	Average 7_O2 %	Average 7_NOx_lbMM #/M	Average 7_Gas_Flow #/sec	Average 7_Fd_Comb	Average 7_Oil_Flow gpm	Average 7_MW MW
07/31/2006 16:42	11.5	9.22	13.54	0.034	21.0	8710	N/A	156.8
07/31/2006 16:43	11.5	9.23	13.55	0.034	21.0	8710	N/A	157.4
07/31/2006 16:44	11.3	9.07	13.55	0.033	21.0	8710	N/A	156.9
07/31/2006 16:45	11.4	9.15	13.55	0.034	21.0	8710	N/A	156.8
07/31/2006 16:46	11.4	9.15	13.55	0.034	21.0	8710	N/A	156.9
07/31/2006 16:47	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.1
07/31/2006 16:48	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.3
07/31/2006 16:49	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.4
07/31/2006 16:50	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.2
07/31/2006 16:51	11.3	9.07	13.55	0.033	21.0	8710	N/A	157.3
07/31/2006 16:52	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.1
07/31/2006 16:53	11.4	9.15	13.55	0.034	21.0	8710	N/A	156.8
07/31/2006 16:54	11.3	9.07	13.55	0.033	21.0	8710	N/A	157.3
07/31/2006 16:55	11.3	9.07	13.55	0.033	21.0	8710	N/A	156.6
07/31/2006 16:56	11.4	9.15	13.55	0.034	21.0	8710	N/A	156.7
07/31/2006 16:57	11.3	9.07	13.55	0.033	21.0	8710	N/A	157.4
07/31/2006 16:58	11.4	9.15	13.55	0.034	21.0	8710	N/A	157.1
07/31/2006 16:59	11.4	9.14	13.54	0.034	21.0	8710	N/A	156.8
07/31/2006 17:00	11.5	9.22	13.54	0.034	21.1	8710	N/A	157.4
07/31/2006 17:01	11.5	9.22	13.54	0.034	21.0	8710	N/A	157.4
07/31/2006 17:02	11.4	9.14	13.54	0.034	21.0	8710	N/A	157.4
Final Average*	**11.4**	**9.14**	**13.55**	**0.034**	**21.0**	**8710**	**N/A**	**157.1**
Maximum*	11.5 07/31/2006 17:01	9.23 07/31/2006 16:43	13.55 07/31/2006 16:58	0.034 07/31/2006 17:02	21.1 07/31/2006 17:00	8710 07/31/2006 17:02	N/A	157.4 07/31/2006 17:02
Minimum*	11.3 07/31/2006 16:57	9.07 07/31/2006 16:57	13.54 07/31/2006 17:02	0.033 07/31/2006 16:57	21.0 07/31/2006 17:02	8710 07/31/2006 17:02	N/A	156.6 07/31/2006 16:55

* Does not include Invalid Averaging Periods ("N/A")

Average Values Report
Generated: 7/31/2006 17:34

RUN #9

Company: JEA Kennedy
Plant: 4215 Talleyrand Avenue
City/St: Jacksonville, FL 32206
Source: CT7

Period Start: 7/31/2006 17:12
Period End: 7/31/2006 17:32
Validation Type: 1/1 min
Averaging Period: 1 min
Type: Block Avg

Period Start:	Average 7_NOx ppm	Average 7_NOxC_gas ppmC	Average 7_O2 %	Average 7_NOx_lbMM #/M	Average 7_Gas_Flow #/sec	Average 7_Fd_Comb	Average 7_Oil_Flow gpm	Average 7_MW MW
07/31/2006 17:12	11.3	9.06	13.54	0.033	21.0	8710	N/A	156.9
07/31/2006 17:13	11.4	9.14	13.54	0.034	21.0	8710	N/A	156.8
07/31/2006 17:14	11.3	9.06	13.54	0.033	21.0	8710	N/A	156.6
07/31/2006 17:15	11.3	9.07	13.55	0.033	21.0	8710	N/A	156.6
07/31/2006 17:16	11.3	9.07	13.55	0.033	21.0	8710	N/A	156.5
07/31/2006 17:17	11.3	9.07	13.55	0.033	21.0	8710	N/A	156.7
07/31/2006 17:18	11.3	9.06	13.54	0.033	21.0	8710	N/A	156.4
07/31/2006 17:19	11.3	9.07	13.55	0.033	21.0	8710	N/A	156.4
07/31/2006 17:20	11.3	9.06	13.54	0.033	21.0	8710	N/A	156.4
07/31/2006 17:21	11.3	9.06	13.54	0.033	21.0	8710	N/A	156.4
07/31/2006 17:22	11.2	8.98	13.54	0.033	21.0	8710	N/A	156.4
07/31/2006 17:23	11.3	9.06	13.54	0.033	21.0	8710	N/A	156.6
07/31/2006 17:24	11.3	9.06	13.54	0.033	20.9	8710	N/A	156.1
07/31/2006 17:25	11.3	9.06	13.54	0.033	20.9	8710	N/A	156.3
07/31/2006 17:26	11.3	9.06	13.54	0.033	20.9	8710	N/A	155.9
07/31/2006 17:27	11.3	9.06	13.54	0.033	21.0	8710	N/A	156.1
07/31/2006 17:28	11.3	9.07	13.55	0.033	20.9	8710	N/A	156.1
07/31/2006 17:29	11.2	8.98	13.54	0.033	20.9	8710	N/A	156.2
07/31/2006 17:30	11.2	8.98	13.54	0.033	20.9	8710	N/A	155.7
07/31/2006 17:31	11.3	9.06	13.54	0.033	20.9	8710	N/A	155.9
07/31/2006 17:32	11.3	9.05	13.53	0.033	20.9	8710	N/A	155.9
Final Average*	**11.3**	**9.05**	**13.54**	**0.033**	**21.0**	**8710**	**N/A**	**156.3**
Maximum*	11.4 07/31/2006 17:13	9.14 07/31/2006 17:13	13.55 07/31/2006 17:28	0.034 07/31/2006 17:13	21.0 07/31/2006 17:27	8710 07/31/2006 17:32	N/A	156.9 07/31/2006 17:12
Minimum*	11.2 07/31/2006 17:30	8.98 07/31/2006 17:30	13.53 07/31/2006 17:32	0.033 07/31/2006 17:32	20.9 07/31/2006 17:32	8710 07/31/2006 17:32	N/A	155.7 07/31/2006 17:30

* Does not include Invalid Averaging Periods ("N/A")

JEA JD Kennedy Generating Station
Combustion Turbine #7 (JEA KCT7)
Annual Environmental Test and CEMS RATA
7/31/2006

		RUN #	O2 traverse - VE - CO RATA 1 thru 9
	MWe(socc)		154.99
	Compressor Inlet degF		83.45
EPA9 - VE	#2FO #/sec		0.00
EPA7E - NOx	NatGas #/sec		20.66
EPA3A - O2	BTU/# - HHV		23495
EPA10 - CO	HHV - BTUH		1.748E+09
	BTU/# - LHV		21166
	LHV - BTUH		1.574E+09
	Start (EDT)	O2 traverse	7/31/06 1:10 PM
	Finish(EDT)	Run 9 RATA	7/31/06 6:32 PM
			AVERAGE

ps:kct7:AATMANSP_CM	AA Cooler Ctrller Man Stpnt	%	0
ps:kct7:AATROUT	AA Cooler Ctrller Servo Output	%	84.83684623
ps:kct7:AB01_HP_SP	CmpRESSED AIR Hi Press Stpnt (S	psig	185
ps:kct7:AB01_LLP_SP	CmpRESSED AIR LOW Press Alm SET	psig	75
ps:kct7:AB01_LP_SP	CmpRESSED AIR LOW Press Stpnt (S	psig	85
ps:kct7:AB34PT001	Inst AIR Cmp	psig	140.3569169
ps:kct7:AFPAP	Barometric Press Transducer 96AP	psig	29.99571231
ps:kct7:AFPBD	BellMouth Inlet Press 96BD	inH2O	80.27335996
ps:kct7:AFPCS	Cmp Inlet Press Transducers 96	inH2O	2.419081491
ps:kct7:AFPEP	Exh Press Trans 96EP-1	inH2O	2.778298462
ps:kct7:AFQ	Cmp Inlet Air Mass Flow	lb/se	898.2661585
ps:kct7:AFQD	Cmp Inlet Dry Air Mass Flow	lb/se	884.8753075
ps:kct7:AMB_RH1	AMBIENT AIR RH FROM WOODWARE		-49.96422953
ps:kct7:AMB_TEMP1	AMBIENT AIR Tmp FROM WOODWAR	deg F	85.81789939
ps:kct7:ATID	Median Anti Icing Inlet Duct Tmp	deg F	0
ps:kct7:A_XFER_BAL	Auto Reg Transfer Balance Vltg		1.177819831
ps:kct7:BB1	[39V-1A] vib Sensor - Turb #1 B	in/s	0.26143549
ps:kct7:BB2	[39V-1B] vib Sensor - Turb #1 B	in/s	0.314540289
ps:kct7:BB3	[39V-2A] vib Sensor - Turb #2 B	in/s	0
ps:kct7:BB4	[39V-3A) vib Sensor - Turb #3 B	in/s	0.187735169
ps:kct7:BB5	[39V-3B) vib Sensor - Turb #3 B	in/s	0.137840834
ps:kct7:BB7	[39V-4A) vib Sensor - Gen #1	in/s	0.19992246
ps:kct7:BB8	[39V-4B) vib Sensor - Gen #1	in/s	0.110021303
ps:kct7:BB9	[39V-5) vib Sensor - Gen #2	in/s	0.091018522
ps:kct7:BB_MAX	Max vib	in/s	0.314510349
ps:kct7:BTGJ1_1	Brg Mtl Tmp - Gen Brg #1-1	deg F	240.4155507
ps:kct7:BTGJ1_2	Brg Mtl Tmp - Gen Brg #1-2	deg F	244.3720373
ps:kct7:BTGJ2_1	Brg Mtl Tmp - Gen Brg #2-1	deg F	206.7108443
ps:kct7:BTGJ2_2	Brg Mtl Tmp - Gen Brg #2-2	deg F	204.8446618
ps:kct7:BTJ1_1	Brg Mtl Tmp - Turb Brg #1-1	deg F	205.5236972
ps:kct7:BTJ1_2	Brg Mtl Tmp - Turb Brg #1-2	deg F	211.5481672
ps:kct7:BTJ2_1	Brg Mtl Tmp - Turb Brg #2-1	deg F	197.1554679

ps:kct7:BTJ2_2	Brg Mtl Tmp - Turb Brg #2-2	deg F	191.5117236
ps:kct7:BTTA1_14	Brg Mtl Tmp - Thrust Active #1-14	deg F	164.4821786
ps:kct7:BTTA1_4	Brg Mtl Tmp - Thrust Active #1-4	deg F	0
ps:kct7:BTTA1_7	Brg Mtl Tmp - Thrust Active #1-7	deg F	170.1425875
ps:kct7:BTTA1_8	Brg Mtl Tmp - Thrust Active #1-8	deg F	0
ps:kct7:BTTI1_4	Brg Mtl Tmp - Thrust Inactive #1-4	deg F	177.3427913
ps:kct7:BTTI1_8	Brg Mtl Tmp - Thrust Inactive #1-8	deg F	49.5081938
ps:kct7:CAS_H2_STA	Enum State for Casing H2 Reading Sta		0
ps:kct7:CELL_1_STA	Enum State for Analyzer #1		1
ps:kct7:CELL_2_STA	Enum State for Analyzer #2		1
ps:kct7:CE_H2_STA	Enum State for Collector End H2 Read		1
ps:kct7:CMHUM	Specific Humidity	#H/#A	0.014869331
ps:kct7:CPD	Cmp Dschrg Press Max Slct	psia	200.2047893
ps:kct7:CPD1A	Cmp Dschrg Press Transd. 96CD-A	psia	200.0716938
ps:kct7:CPD1B	Cmp Dschrg Press Transd. 96CD-B	psia	201.300927
ps:kct7:CPD1C	Cmp Dschrg Press Transd. 96CD-C	psia	200.2083943
ps:kct7:CPDABS	Absolute Cmp Dschrg Press		214.9381053
ps:kct7:CPR	CmpE Press RATIO	ratio	14.67592414
ps:kct7:CPRERR	Cmp PRESS RATIO ERROR	ratio	1.512027357
ps:kct7:CPRLIM	Cmp Press RATIO OPERATING LIMI	ratio	16.44024425
ps:kct7:CQBH	IBH Mass Flow Of Vlv	lb/se	8.47383E-06
ps:kct7:CQTC	Cmp Airflow Tmp Correction		0.977386034
ps:kct7:CSBHX	Inlet Heating Ctrl Vlv Pos Tro	%	0.727469291
ps:kct7:CSGV	IGV angle in deg	DGA	89.96729618
ps:kct7:CSKGVMAX	Open IGV Pos	DGA	90
ps:kct7:CSKGVSSR	Simple Cycle IGV Tmp Cont Ref	deg F	700
ps:kct7:CSRGV	IGV Ref	DGA	89.9992508
ps:kct7:CSRGVMAN_C	IGV Stpnt Cmd Sig		89.9992508
ps:kct7:CSRGVX	Tmp Ctrl and Man Ctrl Ref	DGA	90.5446996
ps:kct7:CSRIHOUT	Inlet Heating Ctrl Vlv Cmd	%	0.000500335
ps:kct7:CSRPR	Cmp PRESS RATIO BLEED HEAT RE	%	3
ps:kct7:CTBD	IBH Cmp Dschrg Air Tmp	deg F	511.4765634
ps:kct7:CTD	Cmp Dschrg Tmp	deg F	769.7438371
ps:kct7:CTDA1	Cmp Dschrg T/C #1	deg F	771.7516739
ps:kct7:CTDA2	Cmp Dschrg T/C #2	deg F	766.5907174
ps:kct7:CTIF1A	Cmp Inlet T/C 1A	deg F	83.67318067
ps:kct7:CTIF1B	Cmp Inlet T/C 1B	deg F	83.35823059
ps:kct7:CTIM	Cmp Inlet Tmp	deg F	83.45163798
ps:kct7:DF	Gen Frequency	Hz	59.99475307
ps:kct7:DLN_MODE	DLN Mode Enum State		7
ps:kct7:DPF	Calculated Power Factor	PF	0.930877393
ps:kct7:DPFM	Modified Power Factor	PF	0.995580828
ps:kct7:DRPFM	Gen Power Factor Ctrl Ref	PF	0.980000019
ps:kct7:DRPF_CMD	Power Factor Cmd Stpnt		0.980000019
ps:kct7:DRVAR	VAR Ctrl Ref		-3.886165619
ps:kct7:DRVAR_CMD	VAR Ctrl Man Ref		-3.886165619
ps:kct7:DTGAC23	Gen Tmp - Cold Air Collector End	deg F	92.01294194
ps:kct7:DTGAH17	Gen Tmp - Hot Air Collector End	deg F	107.6596628
ps:kct7:DTGGC10	Gen Tmp - Cold Gas Coupling End #10	deg F	101.4074488
ps:kct7:DTGGC11	Gen Tmp - Cold Gas Collector End #11	deg F	-160.7816338
ps:kct7:DTGGC12	Gen Tmp - Cold Gas Collector End #12	deg F	104.229761
ps:kct7:DTGGC13	Gen Tmp - Cold Gas Coupling End #13	deg F	104.3068646
ps:kct7:DTGGH28	Gen Tmp - Hot Gas Ctr #28	deg F	107.8734898
ps:kct7:DTGGH29	Gen Tmp - Hot Gas Ctr #29	deg F	124.2629398
ps:kct7:DTGGK24	Gen Tmp - Frame Common Cold Gas	deg F	106.9283487

ps:kct7:DTGSA4	Gen Tmp - Stator Collector End #4	deg F	140.5225755
ps:kct7:DTGSA5	Gen Tmp - Stator Collector End #5	deg F	131.057241
ps:kct7:DTGSA6	Gen Tmp - Stator Collector End #6	deg F	139.0221869
ps:kct7:DTGSC7	Gen Tmp - Stator Ctr	deg F	144.544707
ps:kct7:DTGSC8	Gen Tmp - Stator Ctr End #8	deg F	148.4115158
ps:kct7:DTGSC9	Gen Tmp - Stator Ctr End #9	deg F	139.9388159
ps:kct7:DTGSF1	Gen Tmp - Stator Coupling End #1	deg F	137.7034836
ps:kct7:DTGSF2	Gen Tmp - Stator Coupling End #2	deg F	134.2487902
ps:kct7:DTGSF3	Gen Tmp - Stator Coupling End #3	deg F	138.0609114
ps:kct7:DTKGAC	Gen Tmp Cold Air Collector End	deg F	113
ps:kct7:DTKGGH	Gen Tmp Hot Gas Ctr	deg F	185
ps:kct7:DTKGGK	Gen Frame Tmp Alm Lvl	deg F	145
ps:kct7:DTKGSC	Gen Stator Ctr Alm Lvl	deg F	239
ps:kct7:DV	Gen Line Vltg	KV	101.6222246
ps:kct7:DVAR	Gen VARS	MVAR	11.61812324
ps:kct7:DV_ERR	Gen to Bus Vltg Diff	%	0.679186447
ps:kct7:DV_VOLT	Gen Vlts - VTUR	Vac	70.13929156
ps:kct7:DWATT	Gen Watts Max Slcted	MW	154.9122305
ps:kct7:DWATT1	Gen Watts 96GG-1 Transducer #1	MW	154.9169695
ps:kct7:DWATT2	Gen Watts 96GG-2 Transducer #2	MW	154.3783882
ps:kct7:DWDROOP	Turb Ld DROOP Ref	%	3.521746603
ps:kct7:EG34IT001	480V SUS #2 MAIN BKR BUS AMPS	Amps	-900.2270454
ps:kct7:EG34IT002	480V SUS #3 MAIN BKR BUS AMPS	Amps	-900.2799057
ps:kct7:EG34TE001	GSU WINDING Tmp 49Q3	deg F	507.2616398
ps:kct7:EG34TE002	GSU WINDING Tmp 49Q4	deg F	169.8141161
ps:kct7:EG34VT001	480V SUS #2 MAIN BKR BUS Vltg	Vrms	-471.3822239
ps:kct7:EG34VT002	480V SUS #3 MAIN BKR BUS Vltg	Vrms	-132.5320132
ps:kct7:EX2K_FLD_A	EX2K Gen Field Current		1187.161345
ps:kct7:EX2K_FLD_T	EX2K Gen Field Tmp		46.5232347
ps:kct7:EX2K_FLD_V	EX2K Gen Field Vltg		210.5974458
ps:kct7:EX2K_GN_PF	EX2K Gen Power Factor		0.962921195
ps:kct7:EX2K_GN_VAR	EX2K Gen Vars		14.04898085
ps:kct7:EX2K_GN_WA	EX2K Gen Watts		176.1917778
ps:kct7:EX2K_HZ	EX2K Gen Frequency		59.99375704
ps:kct7:EX2K_PHS_A	EX2K Gen Stator Current		5.571394705
ps:kct7:EX2K_TRM_V	EX2K Gen Terminal Vlts		18.34907916
ps:kct7:EXHMASS	Exh Mass Flow		918.9204909
ps:kct7:FA34LT001	FALSE Strt Drn Lvl Trans	%	42.89354115
ps:kct7:FA34LT002	MISCELLANEOUS Drn Tnk Lvl TRANS	%	42.56182566
ps:kct7:FALT02_HHL	MISC Hi Hi Lvl Stpnt		90
ps:kct7:FALT02_HL	MISC Hi Lvl Stpnt		75
ps:kct7:FB34LT020	FUEL GAS Scrub Tnk Lvl Trans	%	14.2295906
ps:kct7:FDG1	Fuel gas flow orifice Diff press	inH2O	31.49540439
ps:kct7:FDG2	Fuel gas flow orifice Diff press	inH2O	109.0951616
ps:kct7:FD_INTENS_1	Prim Flm Det #1 INTENSITY		63.25589599
ps:kct7:FD_INTENS_2	Prim Flm Det #2 INTENSITY		64.34267585
ps:kct7:FD_INTENS_3	Prim Flm Det #3 INTENSITY		66.02641929
ps:kct7:FD_INTENS_4	Prim Flm Det #4 INTENSITY		59.03150949
ps:kct7:FLAME	Flm Detection Enum State		15
ps:kct7:FPG2	Intrstg fuel gas press	psig	399.9236989
ps:kct7:FPG2A	Intrstg fuel gas press xmitter 96FG-2A	psig	399.9354644
ps:kct7:FPG2B	Intrstg fuel gas press xmitter 96FG-2B	psig	403.1587538
ps:kct7:FPG2C	Intrstg fuel gas press xmitter 96FG-2C	psig	399.9332057
ps:kct7:FPG3	Fuel gas flow orifice upstream press xm	psig	451.4470843
ps:kct7:FPLA	Liq Fuel Prg Manifold Press Abso		210.6265593

ps:kct7:FPPR	Liq Fuel Prg Press Ratio		0.979799891
ps:kct7:FQG	Gas Fuel Flow	lb/se	20.66107882
ps:kct7:FQKGDB	Gas Flow Calc-Deadband Constant		3
ps:kct7:FQKGG	Gas Flow Calc-Gas Constant		2.823699951
ps:kct7:FQL1	Flow Divider Mag Pickup - Spd	%	0
ps:kct7:FQLM1	Liq Fuel Mass Flow	lb/se	0
ps:kct7:FQLMFI	Total Mass Of Liq Fuel During Firing		0
ps:kct7:FQROUT	Liq Fuel Bypass Vlv Servo Cmd	%	-25
ps:kct7:FRCROUT	Fuel Gas Spd Ratio Servo Cmd	%	47.13999452
ps:kct7:FSGPM1	PM1 GCV Pos Fdbk	%	19.07331281
ps:kct7:FSGPM2	PM2 GCV Pos Fdbk	%	33.52437326
ps:kct7:FSGPM3	PM3 GCV Pos Fdbk	%	59.16113326
ps:kct7:FSGQ	Quaternary GCV Pos Fdbk	%	0.138288701
ps:kct7:FSGR	Pos fdbck srv (Hi Val Slcted)	%	46.52303565
ps:kct7:FSKLP1	Liq Fuel Prefill Lvl		0
ps:kct7:FSKLPC	Liq Fuel Prefill Current Val		0
ps:kct7:FSKLPR	Slcted Liq Fuel Prefill Rate		8
ps:kct7:FSR	Fuel Stroke Ref	%	76.19521595
ps:kct7:FSR1	Liq Fuel Stroke Ref from Fuel Splitter	%	0
ps:kct7:FSR2	Gas Fuel Stroke Ref from Fuel Splitter	%	76.18589666
ps:kct7:FSRACC	FSR: Accl Ctrl	%	76.58359336
ps:kct7:FSRCPR	Cmp PRESS RATIO Lmt FSR	%	128
ps:kct7:FSRDWCK	FSR Clamp After Sync Until MW Fdbk I	%	100
ps:kct7:FSRG1OUT	PM1 Gas Ctrl Vlv Servo Cmd	%	19.07928239
ps:kct7:FSRG2OUT	PM2 Gas Ctrl Vlv Servo Cmd	%	33.69746609
ps:kct7:FSRG3OUT	PM3 Gas Ctrl Vlv Servo Cmd	%	59.18701562
ps:kct7:FSRGQOUT	Gas Quaternary Vlv Servo Cmd	%	-25
ps:kct7:FSRMAN	FSR: Man Ctrl	%	100
ps:kct7:FSRMAN_CMD	FSR Stpnt Cmd		100
ps:kct7:FSRMAX	Max Fuel Ref	%	100
ps:kct7:FSRMIN	FSR: Min	%	12.85240806
ps:kct7:FSRN	Spd Ctrl Fuel Stroke Ref	%	80.0920265
ps:kct7:FSRPM1_PCT	PM1 Rate Ctrlled Flow Split		16.76092911
ps:kct7:FSRPM2_PCT	PM2 Rate Ctrlled Flow Split		100
ps:kct7:FSRPM3_PCT	PM3 Rate Ctrlled Flow Split		63.83844842
ps:kct7:FSRQT_PCT	Quat Rate Ctrlled Flow Split		0
ps:kct7:FSRSD	Shtdn FSR Sig	%	100
ps:kct7:FSRSU	FSR: Strtup Ctrl	%	100.1934509
ps:kct7:FSRT	Tmp Ctrl Fuel Stroke Referenc	%	76.2285949
ps:kct7:FSR_CONTROI	Fuel Ctrl Enum State		5.995782738
ps:kct7:FTG	Fuel gas Tmp	deg F	84.24665301
ps:kct7:FTGI1	Fuel gas Tmp T/C #1	deg F	84.48297739
ps:kct7:FTGI2	Fuel gas Tmp T/C #2	deg F	84.10777863
ps:kct7:FTGI3	Fuel gas Tmp T/C #3	deg F	84.07834241
ps:kct7:FX1	Fraction of Liq Fuel		0
ps:kct7:FXKLFPLA	Liq Fuel Prg Ratio Lwr Lmt		0.959999979
ps:kct7:FXKLFPVLA	Liq Fuel Prg Ratio Very Low Lmt		0.949999988
ps:kct7:Gross MW On-li	KCT7 Gross MW While On-line	MW	154.9898354
ps:kct7:H2FDP	Gen Rotor Fan Diff Pressur	inH2O	2.01180501
ps:kct7:H2GP	Gen Gas Press Trans	psig	30.07998005
ps:kct7:HOFDP1	Hyd Oil Fltr Diff Press Trans #1	psig	0
ps:kct7:HOFDP2	Hyd Oil Fltr Diff Press Trans #2	psig	0
ps:kct7:HOSP1	Hyd Supply Pmp mtr Ctrl TD	psig	0
ps:kct7:HVTEMP	GSU HV Tmp		No Good Data For Ca
ps:kct7:HYD_PUR1	Cell #1 Hyd Purity Sig from Gas	%	95.61388417

ps:kct7:HYD_PUR2	Cell #2 Hyd Purity Sig from Gas	%	98.12286209
ps:kct7:HYD_PUR_CAS	Hyd Purity Val at Casing	%	98.20283098
ps:kct7:HYD_PUR_CE	Hyd Purity Val at Collector End	%	98.12286209
ps:kct7:HYD_PUR_TE	Hyd Purity Val at Turb End	%	95.61388417
ps:kct7:iorate	KGS CT7 PI Interface I/O Rate	events/min	2989.825676
ps:kct7:JEA_77FL_1	Liq FUEL FLOW	gpm	1.32277447
ps:kct7:K62CD	Cooldown Time		1440
ps:kct7:L90PSEL	PreSlcted Ld Stpnt	MW	85
ps:kct7:L90PSEL_CMD	PreSlct Ld Stpnt Cmd		85
ps:kct7:LFPDP	Liq Fuel Prg Manifold Diff	psi	-4.327170343
ps:kct7:LOFDP1	Lube Oil Fltr Diff Press Trans	psig	0
ps:kct7:LOFDP2	Lube Oil Fltr Diff Press Trans	psig	0
ps:kct7:LOKALM1	Lube Oil Hdr Tmp Hi Alm Stpnt	deg F	165
ps:kct7:LOKALM2	#1 Turb Jrnl Brg Drn Tmp Hi Setp	deg F	200
ps:kct7:LOKALM3	#2 Turb Jrnl Brg Drn Tmp Hi Set	deg F	200
ps:kct7:LOKALM4	#3 Turb Jrnl Brg Drn Tmp Hi Set	deg F	200
ps:kct7:LOKALM5	#1 Turb Thrust Brg Drn Tmp Hi Setpo	deg F	200
ps:kct7:LOTL	Lube Oil Tnk Lvl Trans	psig	0
ps:kct7:LTB1D	#1 Turb Jrnl Brg Drn Tmp	deg F	158.837837
ps:kct7:LTB2D	#2 Turb Jrnl Brg Drn Tmp	deg F	158.2060973
ps:kct7:LTB3D	#3 Turb Jrnl Brg Drn Tmp	deg F	0
ps:kct7:LTG1D	#1 Gen Jrnl Brg Drn Tmp	deg F	0
ps:kct7:LTG2D	#2 Gen Jrnl Brg Drn Tmp	deg F	162.6381382
ps:kct7:LTTH1	Lube Oil Hdr T/C Tmp.	deg F	132.8290367
ps:kct7:LVTEMP	GSU LV Tmp		No Good Data For Ca
ps:kct7:MSG_FLD1	Msg Field #1		0
ps:kct7:MSG_FLD2	Msg Field #2		0
ps:kct7:MSG_FLD3	Msg Field #3		1
ps:kct7:MWATT_MAX	Max Mwatt Stpnt	MW	192
ps:kct7:MWATT_MIN	Min Mwatt Stpnt	MW	2
ps:kct7:M_XFER_BAL	Man Reg Transfer Balance Vltg Indi		0.034083883
ps:kct7:NN34LT001	OIL-Wtr Sep Tnk Lvl TRANSMITT	FT	10.08857295
ps:kct7:NN34LT002	WASTE Wtr Tnk Lvl Trans	FT	3.066815354
ps:kct7:NORMAL	Normal		3
ps:kct7:QXKTL1	Lean-Lean Trnp Liq Fuel		1500
ps:kct7:R63AB1	CmpRESSED AIR Hi Press Lmt	psig	195
ps:kct7:R63AB2	CmpRESSED AIR LOW Press Lmt		90
ps:kct7:R71WF1	DEMIN Tnk LOW Lvl Stpnt	FT	0
ps:kct7:R71WF2	DEMIN Tnk LOW Lvl Stpnt DISPLAY	FT	15
ps:kct7:R71WF_MAX	DEMIN Tnk Max Lvl	FT	0
ps:kct7:R71WF_MAX_S	DEMIN Tnk Max Lvl Stpnt	FT	0
ps:kct7:R71WF_MIN	DEMIN Tnk Min Lvl	FT	0
ps:kct7:R71WF_MIN_S	DEMIN Tnk Max Lvl Stpnt		0
ps:kct7:R71WF_SIMVA	DEMIN Tnk Max Lvl Stpnt		0
ps:kct7:R71WF_SIM_S	DEMIN Tnk Max Lvl Stpnt		0
ps:kct7:R90MWSP	Remote PreSlcted Ld Stpnt	MW	100.2438512
ps:kct7:SC43	Cmd Mode		5
ps:kct7:SC43F	Fuel Slction Cmd State		0
ps:kct7:SC43GEN	Gen Ctrl Slction		0
ps:kct7:SC43LOAD	Ld Capacity Ctrl Mode Slction		2
ps:kct7:SC43SYNC	Synch Ctrl Mode Slction		0
ps:kct7:SFDIFF1	Frequency Error (Slip) - VTUR	Hz	0
ps:kct7:SFL1	Bus PT Frequency	Hz	59.99645043
ps:kct7:SPEED_LVL	Spd Lvl Ind		1
ps:kct7:SP_WFHL	Stpnt DEMIN Tnk Hi Lvl		44

ps:kct7:SP_WFLL	Stpnt DEMIN Tnk LOW Lvl		10
ps:kct7:SP_WFSST	Wtr INJECTION Pmp BOOSTER Pmp		30
ps:kct7:SS43	Cmd State		5
ps:kct7:SS43F	Fuel Slction Cmd State Output		0
ps:kct7:SS43GEN	Gen Ctrl Slction		0
ps:kct7:SS43LOAD	Ld Slction Enum State Variable		2
ps:kct7:SS43SYNC	Synch Ctrl Slction		0
ps:kct7:SSDIFF1	Phase Difference - VTUR	DGA	180
ps:kct7:SS_REF_OUT	Ld Commutated Inv (Static Strter) Spe	%	0
ps:kct7:SS_STATUS	Static Strt Enum Display State		7
ps:kct7:STATUS_FLD	Status Field		15
ps:kct7:SVL	Sys Line Vltg	%	100.9472624
ps:kct7:SVL_VOLT	Sys Bus Vltg	Vac	69.6614798
ps:kct7:SVL_VPRO	Line Vlts Read By VPRO	Vac	69.13082772
ps:kct7:SYS_FREQ	Station Line Frequency	Hz	60
ps:kct7:TCES	Emerg trips count		120
ps:kct7:TCFLS	Fast Ld Strts count		12
ps:kct7:TCFS	Fired Strts count		953.0070381
ps:kct7:TCMIS	Manly iniated Strts count		1091.033692
ps:kct7:TCTS	Total Strts count		1133.033332
ps:kct7:TE_H2_STA	Enum State for Turb End Reading Stat		1
ps:kct7:TFQG_CNT	Total Per Unit Gas Mass Count	ICNTS	3395334.294
ps:kct7:TFQLM1_CNT	Total Per Unit Liq Mass Count	ICNTS	533367
ps:kct7:TFT_LCNT	Total fired time on Liq - Current Cou		7097
ps:kct7:TFT_LTIM	Total fired time on Liq - Current Tim		159920
ps:kct7:TFT_M1	Fired Time In Mode 1		116.6999969
ps:kct7:TFT_M1CNT	Fired Time In Mode 1 - Count		1167
ps:kct7:TFT_M2	Fired Time In Mode 2		49.03358113
ps:kct7:TFT_M2CNT	Fired Time In Mode 2 - Count		490
ps:kct7:TFT_M3	Fired Time In Mode 3		56.19999695
ps:kct7:TFT_M3CNT	Fired Time In Mode 3 - Count		562
ps:kct7:TFT_M4	Fired Time In Mode 4		73.53358113
ps:kct7:TFT_M4CNT	Fired Time In Mode 4 - Count		735.159418
ps:kct7:TFT_M5	Fired Time In Mode 5		1
ps:kct7:TFT_M5CNT	Fired Time In Mode 5 - Count		10
ps:kct7:TFT_M5Q	Fired Time In Mode 5Q		0
ps:kct7:TFT_M5QCNT	Fired Time In Mode 5Q - Count		0
ps:kct7:TFT_M6	Fired Time In Mode 6		5214.167964
ps:kct7:TFT_M6CNT	Fired Time In Mode 6 - Count		52147.72777
ps:kct7:TFT_M6Q	Fired Time In Mode 6Q		0
ps:kct7:TFT_M6QCNT	Fired Time In Mode 6Q - Count		0
ps:kct7:TFT_T	Total fired time		54.51012494
ps:kct7:TFT_TCNT	Total fired time - Current Count		551.2241217
ps:kct7:TGGCAVG	Gen Tmp Monitor Cold Gas A	deg F	104.2784711
ps:kct7:TGGHAVG	Gen Tmp Monitor Hot Air Av	deg F	116.0783884
ps:kct7:TGKGCA	Gen Tmp Monitor Cold Gas T	deg F	145
ps:kct7:TGKGHA	Gen Hot Gas Hi Tmp Alm	deg F	212
ps:kct7:TGKSAA	Gen Tmp Monitor Hi Tmp	deg F	275
ps:kct7:TGKSFA	Gen Tmp Monitor Hi Tmp	deg F	275
ps:kct7:TGSDIF1	Gen Tmp Monitor Differenti	deg F	-2.825688698
ps:kct7:TGSDIF2	Gen Tmp Monitor Differenti	deg F	3.136759635
ps:kct7:TGSDIF3	Gen Tmp Monitor Differenti	deg F	-0.920941816
ps:kct7:TGSFSPRD	Gen Tmp Monitor Stator Tem	deg F	3.828362119
ps:kct7:TH1	Spd Sensor #1		1
ps:kct7:TH2	Spd Sensor #2		1

ps:kct7:TH3	Spd Sensor #3		1
ps:kct7:TNGV	Spd/IGV Tmp BIAS	deg F	0
ps:kct7:TNH	Turb HP shaft Spd in %	%	99.99125898
ps:kct7:TNHAR	Turb Hi Press Accel Ref	%/sec	1
ps:kct7:TNHCOR	Turb HP Spd, ISO Corrected	%	97.71828857
ps:kct7:TNH_OS	Protective module Spd Sig	%	99.99103738
ps:kct7:TNH_OS_MAX	Max Spd Attained On OverSpd Test	rpm	0
ps:kct7:TNH_V	Voted Spd Sig (TMR)	rpm	3599.553709
ps:kct7:TNR	Spd Ctrl Ref	%	103.9261523
ps:kct7:TNRI	ISOCHRONOUS Spd Ref	%	0
ps:kct7:TNRL	Ld Turb Spd Ref	%	100.4030683
ps:kct7:TNRX	SlctED Spd Ref	%	103.9261523
ps:kct7:TN_ERR	Spd ERROR	%	0.388545655
ps:kct7:TOTGAS	Totalized Gas Fuel		339533461.8
ps:kct7:TOTLIQUID	Totalized Liq Fuel		53336700
ps:kct7:TOTLIQUIDA	TOTALIZED Liq FUEL CONSUMPTION		1651000
ps:kct7:TOTLIQUIDB	TOTAL Liq FLOW		14425.38987
ps:kct7:TPR	G1\TPR	ratio	14.48992438
ps:kct7:TTGVP	IGV Tx Ctrl Exh Tmp Min Lmt	deg F	No Good Data For Ca
ps:kct7:TTIB1	Turb Tmp - Inner Barrel	deg F	174.6588947
ps:kct7:TTIB2	Turb Tmp - Inner Barrel	deg F	171.5569377
ps:kct7:TTKOT1	Turb OverTmp Isothermal Setting	deg F	1240
ps:kct7:TTKOT2	Turb OverTmp Trip - Incremental Tmp /	deg F	40
ps:kct7:TTKOT3	Turb OverTmp Alm - Incremental Tmp /	deg F	25
ps:kct7:TTRF1	COMBUSTION Ref Tmp	deg F	2404.757334
ps:kct7:TTRX	Tmp Ctrl Ref	deg F	1145.706294
ps:kct7:TTRXB	Spd Biased Tmp Ctrl Referen	deg F	1145.795574
ps:kct7:TTRXCPO	Cmp Op Lmt Prot IGV Ctrl Exh T	deg F	0
ps:kct7:TTRXGV	IGV Tmp Ctrl Ref	deg F	1138.85457
ps:kct7:TTRXP	Tmp Ctrl Prim Tmp Ref	deg F	1145.735776
ps:kct7:TTRXS	Tmp Ctrl Backup Tmp Ref	deg F	1169.548243
ps:kct7:TTWS1AO1	Turb Tmp Whlspc 1ST Stg A	deg F	939.8868467
ps:kct7:TTWS1AO2	Turb Tmp Whlspc 1ST Stg A	deg F	936.948167
ps:kct7:TTWS1FI1	Turb Tmp Whlspc 1ST Stg F	deg F	396.8690765
ps:kct7:TTWS1FI2	Turb Tmp Whlspc 1ST Stg F	deg F	893.2111722
ps:kct7:TTWS2AO1	Turb Tmp Whlspc 2nd Stg A	deg F	628.5241874
ps:kct7:TTWS2AO2	Turb Tmp Whlspc 2nd Stg A	deg F	0
ps:kct7:TTWS2FO1	Turb Tmp Whlspc 2nd Stg F	deg F	935.127294
ps:kct7:TTWS2FO2	Turb Tmp Whlspc 2nd Stg F	deg F	942.5337842
ps:kct7:TTWS3AO1	Turb Tmp Whlspc 2nd Stg F	deg F	473.2181661
ps:kct7:TTWS3AO2	Turb Tmp Whlspc 3rd Stg A	deg F	0
ps:kct7:TTWS3FO1	Turb Tmp Whlspc 3rd Stg F	deg F	815.8732989
ps:kct7:TTWS3FO2	Turb Tmp Whlspc 3rd Stg F	deg F	-37.70884721
ps:kct7:TTXD1	Exh T/C Array By Pos	deg F	1147.294623
ps:kct7:TTXD1_1	Exh T/C 1- Cmpensated	deg F	1147.382314
ps:kct7:TTXD1_10	Exh T/C 10 - Cmpensated	deg F	1146.028273
ps:kct7:TTXD1_11	Exh T/C 11 - Cmpensated	deg F	1128.111256
ps:kct7:TTXD1_12	Exh T/C 12 - Cmpensated	deg F	1140.549808
ps:kct7:TTXD1_13	Exh T/C 13 - Cmpensated	deg F	1139.100676
ps:kct7:TTXD1_14	Exh T/C 14 - Cmpensated	deg F	1139.625897
ps:kct7:TTXD1_15	Exh T/C 15 - Cmpensated	deg F	1145.1957
ps:kct7:TTXD1_16	Exh T/C 16 - Cmpensated	deg F	1145.010755
ps:kct7:TTXD1_17	Exh T/C 17 - Cmpensated	deg F	1147.453386
ps:kct7:TTXD1_18	Exh T/C 18 - Cmpensated	deg F	1160.439251
ps:kct7:TTXD1_19	Exh T/C 19 - Cmpensated	deg F	1187.157834

ps:kct7:TTXD1_2	Exh T/C 2- Cmpensated	deg F	1157.337572
ps:kct7:TTXD1_20	Exh T/C 20 - Cmpensated	deg F	1161.012471
ps:kct7:TTXD1_21	Exh T/C 21 - Cmpensated	deg F	1144.453639
ps:kct7:TTXD1_22	Exh T/C 22 - Cmpensated	deg F	1123.815899
ps:kct7:TTXD1_23	Exh T/C 23 - Cmpensated	deg F	1147.806591
ps:kct7:TTXD1_24	Exh T/C 24 - Cmpensated	deg F	1135.966081
ps:kct7:TTXD1_25	Exh T/C 25 - Cmpensated	deg F	1155.147495
ps:kct7:TTXD1_26	Exh T/C 26 - Cmpensated	deg F	1143.214791
ps:kct7:TTXD1_27	Exh T/C 27 - Cmpensated	deg F	1164.139953
ps:kct7:TTXD1_3	Exh T/C 3- Cmpensated	deg F	1135.387702
ps:kct7:TTXD1_4	Exh T/C 4- Cmpensated	deg F	1156.825827
ps:kct7:TTXD1_5	Exh T/C 5- Cmpensated	deg F	1143.916735
ps:kct7:TTXD1_6	Exh T/C 6 - Cmpensated	deg F	1151.959592
ps:kct7:TTXD1_7	Exh T/C 7 - Cmpensated	deg F	1145.493821
ps:kct7:TTXD1_8	Exh T/C 9 - Cmpensated	deg F	1132.983724
ps:kct7:TTXD1_9	Exh T/C 9 - Cmpensated	deg F	1126.684165
ps:kct7:TTXD2	Exh T/C Array By Val	deg F	1187.187098
ps:kct7:TTXM	Exh Tmp Median Corrected By Average	deg F	1145.755895
ps:kct7:TTXSP1	Combustion Monitor Actual Spread 1	deg F	64.87057932
ps:kct7:TTXSP2	Combustion Monitor Actual Spread 2	deg F	60.07508138
ps:kct7:TTXSP3	Combustion Monitor Actual Spread 3	deg F	58.53088335
ps:kct7:TTXSPL	Combustion Monitor Allowable Spread	deg F	168.1385634
ps:kct7:TTXSPLB	Fltred Biased Spread Lmt	deg F	99.98501873
ps:kct7:TTXSPO	Combustion Monitor Allowable Spread (	deg F	0
ps:kct7:WF34LT001	Demin Storg Tnk LVL TRANSMITT	FT	30.56092251
ps:kct7:WF_MAX	DEMIN Tnk MAX Lvl	IN	44
ps:kct7:WQ	Wtr Injection Flow from Fdbk	lb/se	0.014153477
ps:kct7:WQDP	Wtr Injection Pmp Dschrg Press	%	37.45823255
ps:kct7:WQF1	Wtr Injection Flow Meter Fdbk #1	lb/se	-0.032555396
ps:kct7:WQF3	Wtr Injection Flow Meter Fdbk #2	lb/se	0.014153477
ps:kct7:WQR2	Wet Low NOx Injection Ref	lb/se	0
ps:kct7:WQSPD	Wtr Injection VFD Spd Fdbk	%	15.89375166
ps:kct7:WSKALM1	Whlspc Alm Stpnt #1	deg F	915
ps:kct7:WSKALM10	Strtup Bias Removal Time Delay	mSEC	3600000
ps:kct7:WSKALM2	Whlspc Alm Stpnt #2	deg F	2000
ps:kct7:WSKALM3	Whlspc Alm Stpnt #3	deg F	1000
ps:kct7:WSKALM4	Whlspc Alm Stpnt #4	deg F	1000
ps:kct7:WSKALM5	Whlspc Alm Stpnt #5	deg F	950
ps:kct7:WSKALM6	Whlspc Alm Stpnt #6	deg F	950
ps:kct7:WSKALM7	Whlspc Alm Stpnt #7	deg F	700
ps:kct7:WSKALM8	Whlspc Stage Spread Lmt	deg F	150
ps:kct7:WSKALM9	Strtup Alm Stpnt Bias	deg F	70
ps:kct7:WSR	Wtr Vlv Ctrl Ref	%	0
ps:kct7:WXC	Ratio of Required Fuel to NOx Wtr Flow	ratio	0
ps:kct7:WXJ	Ratio of Actual Fuel to NOx Wtr Flow	ratio	1.2357E+36

5.0 Monitoring Plan Report

FACILITY INFORMATION (RT 102)

ORIS Code/Facility ID: 666 EPA AIRS ID: State ID:

Plant Name: KENNEDY State: FL Latitude: 302152 Longitude: 0813725

County Code: 031 County Name: DUVAL Source Category/Type: ELECTRIC UTILITY

Primary SIC Code/Description: 4911 Electric Services

Add Quarter: 2000Q3

Update Quarter: 2006Q3

UNIT OPERATION INFORMATION (RT 504)

Unit ID	Unit Short Name	Boiler Type	Max Heat Input(mmBtu)	1st Comm Operation Date	Retirement Date	Stack Exit Height	Stack Base Elevation	Area At Stack Exit	Area At Flow Monitor	Non-Load-Based Unit
7	UNIT 7	CT	1822.0	08/08/2000	/ /	90	10	254		

Boiler Type Codes: CT - Simple cycle combustion turbine

UNIT PROGRAM INFORMATION (RT 505)

Unit ID	Program	Unit Class	Reporting Frequency	Program Participation Date	State Regulation Code	State/Local Regulatory Agency Code
7	ARP	P2	Q	08/08/2000		

Unit Class Codes: P2 - Phase II (ARP only)
Reporting Frequency Codes: Q - Quarterly

EIA Cross Reference Information (RT 506)

Unit ID	Part 75 Monitoring Location ID	EIA Boiler ID	EIA Flue ID	EIA Reporting Year	EIA 767 Reporting Indicator	EIA Facility ID
7	7				N	

UNIT/STACK/PIPE ID: 7

MONITORING SYSTEMS/ANALYTICAL COMPONENTS (RT 510)

SYSTEM						ANALYTICAL COMPONENTS AND DAHS SOFTWARE						
Stat.	System ID	Para-meter	P/B	First Reporting Date	Last Reporting Date	Comp. ID	Stat.	Comp. Type	Sample Method (SAM)	Manufacturer	Model or Version	Serial #
C	101	NOX	P	08/08/2000	/ /	002	U	O2D	EXT	SERVOMEX	1440C	1440C/1435
						202	D	NOXA	EXT	THERMO ENVIRONMENTAL CORP	42C	42C-70422-365
						212	A	NOXA	EXT	THERMO ENVIRONMENTAL CORP	42 CLS - NOXA	42C-67847-358
						900	C	DAHS		GE ENERGY SERVICES	7.5.055	123456
C	102	GAS	P	08/08/2000	/ /	003	U	GFFM	ORF	TRAID	8"-300S-S/40S	992335
						900	C	DAHS		GE ENERGY SERVICES	7.5.055	123456
C	103	OILV	P	08/08/2000	/ /	009	C	OFFM	PDP	DANIEL	B-70-CB	9906-29864-1-1
						041	A	OFFM	PDP	DANIEL	B-70-CB	9912-U001326-1-1
						042	A	OFFM	PDP	DANIEL	B-70-CB	9912-U001333-1-1
						043	A	OFFM	PDP	DANIEL	B-70-CB	0111-U004042-1-1
						044	A	OFFM	PDP	DANIEL	B-70-CB	0203-U004526-1-1
						045	A	OFFM	PDP	DANIEL	B-70-CB	0402-2847 U-1-1
						046	A	OFFM	PDP	DANIEL	B-70-CB	0106-U003521-1-1
						047	A	OFFM	PDP	DANIEL	B-70-CB	9912-U001334-1-1
						048	A	OFFM	PDP	DANIEL	B-70-CB	0303-450U-1-1
						900	C	DAHS		GE ENERGY SERVICES	7.5.055	123456

Parameter Monitored Codes: GAS - Gas fuel flow, NOX - NOx emission rate, OILV - Volumetric oil flow
Primary/Backup Codes: P - Primary
Component Type Codes: DAHS - Data acquisition & handling system, GFFM - Gas fuel flowmeter, NOXA - Dual-Range NOx analyzer, O2D - Dry O2 analyzer, OFFM - Oil fuel flow meter
SAM codes: EXT - Dry Extractive, ORF - Orifice, PDP - Positive displacement
Status Codes: A - Add, C - Corrected, D - Delete, U - Unchanged

Unit/Stack/Pipe ID: 7

EMISSIONS FORMULAS (RT 520)

Status	Formula ID#	Parameter	Formula Code	Formulas
C	001	NOX	19-1	1.194E-7 * S#(212-101) * F#(002) * (20.9 / (20.9 - S#(002-101)))
U	002	FD	F-8	((F#(003) * 8710) + (F#(005) * 9190)) / (F#(003) + F#(005))
U	003	HI	D-6	S#(003-102) * GCV_gas / 1000
U	004	OILM	D-3	S#(009-103) * DENSITY_oil
U	005	HI	D-8	F#(004) * GCV_oil / 1000000
U	006	SO2	D-5	0.0006 * F#(003)
U	007	SO2	D-2	2.0 * F#(004) * (%S_oil / 100.0)
U	008	CO2	G-4	1040 * F#(003) * 2.597E-3 * 44 /2000
U	009	CO2	G-4	1420 * F#(004) * 2.597E-3 * 44 / 2000
U	010	CO2	G-4A	F#(008) + F#(009)
U	011	HI	D-15A	F#(003) + F#(005)
U	012	SO2	D-12	F#(006) + F#(007)

Status Codes: C - Corrected, U - Unchanged
Parameter Codes: CO2 - CO2 mass emissions, FD - Dry f-factor, HI - Heat input, NOX - NOx emission rate, OILM - Mass of oil, SO2 - SO2 mass emissions

SPAN VALUES (RT 530)

Unit/ Stk ID	Para-meter	Sc.	Meth-od	MPC/ MEC/ MPF	Max. NOx Rate	Span Value	Full-Scale Range	Units of Meas.	Eff. Date and Hour	Inactive Date & Hour	Dual Spans Req.	Def. High Range Value
7	NOX	H	HD	100.000	1.207	100	100	PPM	01/01/2001 00	05/16/2006 08	D	
	NOX	H	TB	200.000	2.414	200	200	PPM	05/16/2006 08	/ /	D	
	NOX	L	HD	20.000	0.000	20	20	PPM	08/08/2000 00	/ /	D	
	O2	H	NA			25.0	25.0	%	08/08/2000 00	/ /		

Parameter Codes: NOX - NOx concentration, O2 - Oxygen
Scale Codes: H - High, L - Low
Method Codes: HD - Historical data, NA - Not Applicable, TB - Table of Constants
Units of Measure Codes: % - Percent, PPM - Parts per million
Dual Span Req. Codes: D - D Two CEMS ranges installed

MAXIMUMS, MINIMUMS, DEFAULTS, AND CONSTANTS (RT 531)

Unit/Stack/ Pipe ID	Parameter	Value	Units of Measure	Purpose	Fuel Type	Source of Value	Controlled/ Uncontrolled Indicator	Begin Use of Value Date	Hr	Value No Longer Used Date	Hr
7	O2X	19.000	%O2	DC	NFS	DCPD	A	08/08/2000	00	/ /	
	SO2G	0.0006	LBMMBTU	F23	PNG	DEF	A	08/08/2000	00	/ /	

Parameter Codes: O2X - Maximum percent O2, SO2G - Generic SO2 default emission rate
Units of Measure Codes: %O2 - Percent O2, LBMMBTU - Pounds per million BTU
Purpose Codes: DC - Diluent Cap Value, F23 - SO2 default rate in F-23 formula
Source of Value Codes: DCPD - Diluent cap default: Part 75, DEF - Default Value
Fuel Type Codes: NFS - Non fuel specific, PNG - Pipeline natural gas

UNIT AND STACK LOAD RANGE AND OPERATING LOAD (RT 535)

Unit/Stack/ Pipe ID	Units of Measure	Maximum Hourly Load	Three-load RATA Exemption Status
7	MW	185	

RANGE OF OPERATION, NORMAL OPERATING LEVEL AND OPERATING LEVEL USAGE (RT 536)

Unit/ Stack ID	Upper Bound of Range Of Operation	Lower Bound of Range Of Operation	Two Most Frequently-used Operating Levels	Designated Normal Op. Level	Second Designated Normal Op. Level	Activation Date	Deactivation Date
7	185	80	H,M	H	M	12/31/2002	/ /

FUEL FLOWMETER DATA (RT 540)

Unit/ Pipe ID	System ID	Parameter	Fuel Type	Maximum Fuel Flow Rate	Units of Measure	Source of Maximum	Initial Accuracy Test Method	Sub Status
7	102	GAS	PNG	20148	HSCF	URV	ILMM	U
	103	OILV	DSL	25500	GALHR	URV	API	U

Parameter Codes: GAS - Gas fuel flow, OILV - Volumetric oil flow
Fuel Type Codes: DSL - Diesel oil, PNG - Pipeline natural gas
Units of Measure Codes: GALHR - Gallons per hour, HSCF - 100 standard cubic feet per hour
Source of Maximum Codes: URV - Upper Range Value
Submission Status Codes: U - Unchanged

MONITORING METHODOLOGIES (RT 585)

Unit ID	Parameter	Methodology	Fuel Type	Primary/ Secondary	Missing Data Approach	Begin Date	End Date
7	CO2	GFF	PNG	P	SPTS	08/08/2000	/ /
	CO2	OFF	DSL	P	SPTS	08/08/2000	/ /
	HI	GFF	PNG	P	SPTS	08/08/2000	/ /
	HI	OFF	DSL	P	SPTS	08/08/2000	/ /
	NOXR	CEM	NFS	P	SPTS	08/08/2000	/ /
	SO2	GFF	PNG	P	SPTS	08/08/2000	/ /
	SO2	OFF	DSL	P	SPTS	08/08/2000	/ /

Parameter Codes: CO2 - Carbon Dioxide, HI - Heat Input, NOXR - NOx Emission Rate, SO2 - Sulfur Dioxide
Fuel Type Codes: DSL - Diesel oil, NFS - Non-fuel specific, PNG - Pipeline natural gas
Methodology Codes: CEM - Continuous emission monitoring, GFF - Hourly gas flow, OFF - Hourly oil flow

CODES FOR MONITORING METHODOLOGY DATA (RT 585)

Missing Data Approach Codes:
Missing Data Approach Codes: SPTS - Standard Part 75

CONTROL INFORMATION (RT 586)

Unit ID	Parameter	Type of Controls	Primary/ Secondary	Original Installation?	Controls Installation Date	Controls Optim-ization Date	Controls Retirement Date	Ozone Season Only?
7	NOX	DLNB	P	O	/ /	/ /	/ /	
	NOX	H2O	S	O	/ /	/ /	/ /	

Parameter Codes: NOX - Nitrogen Oxides
Type of Controls Codes: DLNB - Dry Low NOx Burners (for turbine), H2O - Water injection

FUEL TYPE INFORMATION (RT 587)

Unit ID	Fuel Classification	Primary/ Secondary Fuel	Start Date	End Date	Ozone Season Flag	Method to Qualify for Monthly GCV	Method to Qualify for Daily % Sulfur
7	DSL	S	08/08/2000	/ /			
	PNG	P	08/08/2000	/ /			

Fuel Classification Codes: DSL - Diesel oil, PNG - Pipeline natural gas

Inspection Record Id	Inspection Type	Inspection Date
11029	Annual	4/4/2007
11030	Annual	4/26/2007
11039	Annual	5/10/2007
11040	Annual	5/10/2007
11041	Annual	5/10/2007
11042	Annual	5/2/2007
11043	Annual	5/2/2007
11044	Annual	5/2/2007
11045	Annual	4/6/2007
11046	Annual	4/6/2007
11047	Annual	4/6/2007

Attachment M

Acid Rain Part Application

United States
Environmental Protection Agency
Acid Rain Program

OMB No. 2060-0258

Acid Rain Permit Application

For more information, see instructions and refer to 40 CFR 72.30 and 72.31

This submission is: ☐ New ☒ Revised

STEP 1

Identify the source by plant name, State, and ORIS code.

Plant Name J. D. Kennedy State FL ORIS Code 0666

STEP 2

Enter the unit ID# for every affected unit at the affected source in column "a." For new units, enter the requested information in columns "c" and "d."

a	b	c	d
Unit ID#	Unit Will Hold Allowances in Accordance with 40 CFR 72.9(c)(1)	New Units Commence Operation Date	New Units Monitor Certification Deadline
015 (CT#7)	Yes	April 2000	July 2000
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		
	Yes		

Plant Name (from Step 1) J. D. Kennedy

STEP 3

Read the standard requirements

Permit Requirements

(1) The designated representative of each affected source and each affected unit at the source shall:
(i) Submit a complete Acid Rain permit application (including a compliance plan) under 40 CFR part 72 in accordance with the deadlines specified in 40 CFR 72.30; and
(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review an Acid Rain permit application and issue or deny an Acid Rain permit;
(2) The owners and operators of each affected source and each affected unit at the source shall:
(i) Operate the unit in compliance with a complete Acid Rain permit application or a superseding Acid Rain permit issued by the permitting authority; and
(ii) Have an Acid Rain Permit.

Monitoring Requirements

(1) The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR part 75.
(2) The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program.
(3) The requirements of 40 CFR part 75 shall not affect the responsibility of the owners and operators to monitor emissions of other pollutants or other emissions characteristics at the unit under other applicable requirements of the Act and other provisions of the operating permit for the source.

Sulfur Dioxide Requirements

(1) The owners and operators of each source and each affected unit at the source shall:
(i) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)), or in the compliance subaccount of another affected unit at the same source to the extent provided in 40 CFR 73.35(b)(3), not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and
(ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide.
(2) Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act.
(3) An affected unit shall be subject to the requirements under paragraph (1) of the sulfur dioxide requirements as follows:
(i) Starting January 1, 2000, an affected unit under 40 CFR 72.6(a)(2); or
(ii) Starting on the later of January 1, 2000 or the deadline for monitor certification under 40 CFR part 75, an affected unit under 40 CFR 72.6(a)(3).
(4) Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program.
(5) An allowance shall not be deducted in order to comply with the requirements under paragraph (1) of the sulfur dioxide requirements prior to the calendar year for which the allowance was allocated.
(6) An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.
(7) An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right.

Plant Name (from Step 1) J. D. Kennedy

STEP 3, Cont'd.

Nitrogen Oxides Requirements The owners and operators of the source and each affected unit at the source shall comply with the applicable Acid Rain emissions limitation for nitrogen oxides.

Excess Emissions Requirements

(1) The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR part 77.
(2) The owners and operators of an affected unit that has excess emissions in any calendar year shall:
(i) Pay without demand the penalty required, and pay upon demand the interest on that penalty, as required by 40 CFR part 77; and
(ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77.

Recordkeeping and Reporting Requirements

(1) Unless otherwise provided, the owners and operators of the source and each affected unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the Administrator or permitting
authority:
(i) The certificate of representation for the designated representative for the source and each affected unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation changing the designated representative;
(ii) All emissions monitoring information, in accordance with 40 CFR part 75, provided that to the extent that 40 CFR part 75 provides for a 3-year period for recordkeeping, the 3-year period shall apply.
(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Acid Rain Program; and,
(iv) Copies of all documents used to complete an Acid Rain permit application and any other submission under the Acid Rain Program or to demonstrate compliance with the requirements of the Acid Rain Program.
(2) The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR part 72 subpart I and 40 CFR part 75.

Liability

(1) Any person who knowingly violates any requirement or prohibition of the Acid Rain Program, a complete Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8, including any requirement for the payment of any penalty owed to the United States, shall be subject to enforcement pursuant to section 113(c) of the Act.
(2) Any person who knowingly makes a false, material statement in any record, submission, or report under the Acid Rain Program shall be subject to criminal enforcement pursuant to section 113(c) of the Act and 18 U.S.C. 1001.
(3) No permit revision shall excuse any violation of the requirements of the Acid Rain Program that occurs prior to the date that the revision takes effect.
(4) Each affected source and each affected unit shall meet the requirements of the Acid Rain Program.

Plant Name (from Step 1) J. D. Kennedy

Step 3, Cont'd.

Liability, Cont'd

(5) Any provision of the Acid Rain Program that applies to an affected source (including a provision applicable to the designated representative of an affected source) shall also apply to the owners and operators of such source and of the affected units at the source.
(6) Any provision of the Acid Rain Program that applies to an affected unit (including a provision applicable to the designated representative of an affected unit) shall also apply to the owners and operators of such unit. Except as provided under 40 CFR 72.44 (Phase II repowering extension plans) and 40 CFR 76.11 (NO_x averaging plans), and except with regard to the requirements applicable to units with a common stack under 40 CFR part 75 (including 40 CFR 75.16, 75.17, and 75.18), the owners and operators and the designated representative of one affected unit shall not be liable for any violation by any other affected unit of which they are not owners or operators or the designated representative and that is located at a source of which they are not owners or operators or the designated representative.
(7) Each violation of a provision of 40 CFR parts 72, 73, 74, 75, 76, 77, and 78 by an affected source or affected unit, or by an owner or operator or designated representative of such source or unit, shall be a separate violation of the Act.

Effect on Other Authorities

No provision of the Acid Rain Program, an Acid Rain permit application, an Acid Rain permit, or an exemption under 40 CFR 72.7 or 72.8 shall be construed as:
(1) Except as expressly provided in title IV of the Act, exempting or excluding the owners and operators and, to the extent applicable, the designated representative of an affected source or affected unit from compliance with any other provision of the Act, including the provisions of title I of the Act relating to applicable National Ambient Air Quality Standards or State Implementation Plans;
(2) Limiting the number of allowances a unit can hold; *provided*, that the number of allowances held by the unit shall not affect the source's obligation to comply with any other provisions of the Act;
(3) Requiring a change of any kind in any State law regulating electric utility rates and charges, affecting any State law regarding such State regulation, or limiting such State regulation, including any prudence review requirements under such State law;
(4) Modifying the Federal Power Act or affecting the authority of the Federal Energy Regulatory Commission under the Federal Power Act; or,
(5) Interfering with or impairing any program for competitive bidding for power supply in a State in which such program is established.

STEP 4

Certification

Read the certification statement, sign, and date

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Name Susan N. Hughes	
Signature Susan N. Hughes	Date 08/20/02

United States
Environmental Protection Agency
Acid Rain Program

OMB No. 2060-0258

Certificate of Representation

For more information, see instructions and refer to 40 CFR 72.24

This submission is: • New •X• Revised (revised submissions must be complete; see instructions)

STEP 1
Identify the source by plant name, State, and ORIS code.

Plant Name	State	ORIS Code
J.D. Kennedy	FL	666

STEP 2
Enter requested information for the designated representative.

Name	Michael Brost
Address	21 West Church Street Jacksonville, FL 32202
Phone Number	904-665-7547
Fax Number	904-665-7950
E-mail address (if available)	brosmj@jea.com

STEP 3
Enter requested information for the alternate designated representative, if applicable.

Name	Athena Mann
Phone Number	904-665-6252
Fax Number	904-665-7950
E-mail address (if available)	mannat@jea.com

STEP 4: Complete Steps 5 and 6, read the certifications, sign and date.

I certify that I was selected as the designated representative or alternate designated representative, as applicable, by an agreement binding on the owners and operators of the affected source and each affected unit at the source.

I certify that I have given notice of the agreement, selecting me as the 'designated representative' for the affected source and each affected unit at the source identified in this certificate of representation, in a newspaper of general circulation in the area where the source is located or in a State publication designed to give general public notice.

I certify that I have all necessary authority to carry out my duties and responsibilities under the Acid Rain Program on behalf of the owners and operators of the affected source and of each affected unit at the source and that each such owner and operator shall be fully bound by my actions, inactions, or submissions.

I certify that I shall abide by any fiduciary responsibilities imposed by the agreement by which I was selected as designated representative or alternate designated representative, as applicable.

I certify that the owners and operators of the affected source and of each affected unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.

Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, an affected unit, or where a utility or industrial customer purchases power from an affected unit under life-of-the-unit, firm power contractual arrangements, I certify that:

I have given a written notice of my selection as the designated representative or alternate designated representative, as applicable, and of the agreement by which I was selected to each owner and operator of the affected source and of each affected unit at the source; and

Allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement or, if such multiple holders have expressly provided for a different distribution of allowances by contract, that allowances and the proceeds of transactions involving allowances will be deemed to be held or distributed in accordance with the contract.

The agreement by which I was selected as the alternate designated representative, if applicable, includes a procedure for the owners and operators of the source and affected units at the source to authorize the alternate designated representative to act in lieu of the designated representative.

J.D. Kennedy
Plant Name (from Step 1)

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

Signature (designated representative)	Date 2-8-06
Signature (alternate designated representative)	Date 2/8/06

STEP 5
Provide the name of every owner and operator of the source and identify each affected unit they own and/or operate.

Name JEA					•X Owner	•X Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					• Owner	• Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

Name					• Owner	• Operator
ID#	ID#	ID#	ID#	ID#	ID#	ID#
ID#	ID#	ID#	ID#	ID#	ID#	ID#

STEP 6
For any new affected units listed at STEP 5 that have not commenced commercial operation, enter the projected date on which the unit is expected to commence commercial operation.

ID#	Projected Commence Commercial Operation Date:
ID#	Projected Commence Commercial Operation Date:
ID#	Projected Commence Commercial Operation Date:
ID#	Projected Commence Commercial Operation Date: